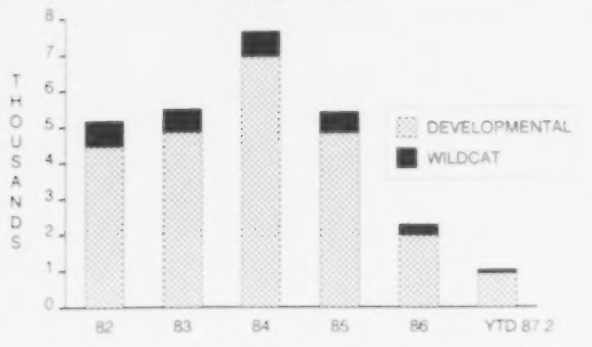
Drilling

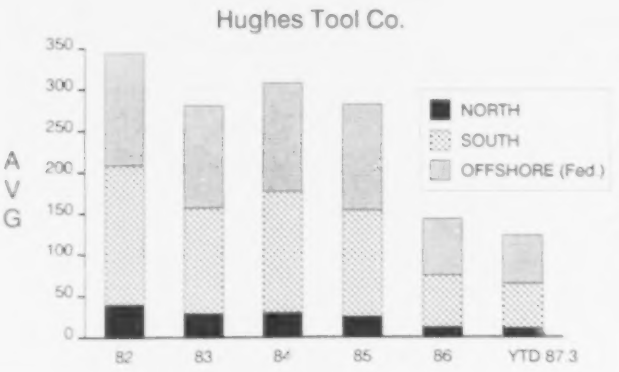
DRILLING PERMITS

LOUISIANA



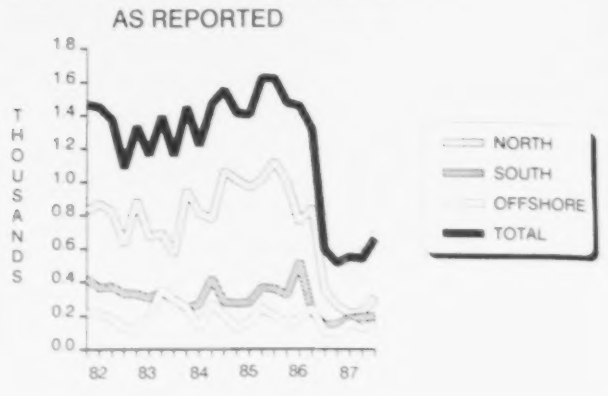
RUNNING RIGS

Hughes Tool Co.



LOUISIANA WELL COMPLETIONS

AS REPORTED



Figures represent TOTAL except when otherwise noted

Totals may not add due to rounding

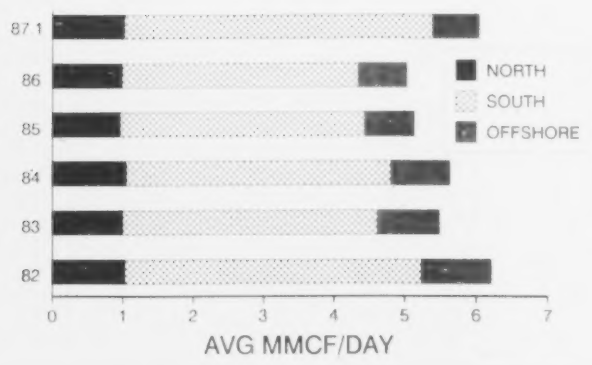
Indicator	1982	1983	1984	1985	1986	86.3	86.4	87.1	Apr	May	Jun	Year to Date Through Last Month Reported June 1986	Year to Date Through Last Month Reported June 1987	% Change
EXPLORATORY WELLS - LA.*														
(As reported)														
Oil	60	66	59	62	34	5	4	10	2	2	0	25	14	-44.0%
Gas	151	97	82	100	63	10	10	13	1	5	8	43	27	-37.2%
Dry	855	821	704	665	423	90	77	110	17	12	23	256	162	-36.7%
DEVELOPMENTAL WELLS - LA.*														
(As reported)														
Oil	1468	1950	2361	2712	1604	168	156	171	55	97	86	1280	409	-68.0%
Gas	1416	1011	992	1145	768	82	133	101	28	30	38	553	197	-64.4%
Dry	1287	1219	1453	1433	1000	238	152	155	48	38	39	610	280	-54.1%
WELL COMPLETIONS - LA.*														
(As reported)														
North	3206	2878	3667	4038	2209	347	261	213	58	76	89	1601	436	-72.8%
South	1400	1193	1248	1325	1036	142	150	180	58	71	62	744	371	-50.1%
Offshore (Incl. fed. water)	637	1094	736	754	628	104	102	157	35	47	43	422	282	-33.2%
Total	5243	5165	5651	6117	3873	593	513	550	151	194	194	2767	1089	-60.6%
RUNNING RIGS (Avg. Hughes Tool)														
North	40	29	30	25	12	12	11	12	11	6	7	12	10	-16.7%
South	168	128	147	129	63	47	52	53	48	47	45	76	50	-34.2%
Offshore (Federal)	137	125	132	129	69	51	59	51	45	51	56	83	51	-38.6%
Total	345	283	310	283	143	110	122	115	102	104	108	171	110	-35.7%
DRILLING PERMITS ISSUED														
Exploratory	727	645	702	599	298	72	86	49	25	16	20	140	110	-21.4%
Developmental	4454	4849	6929	4811	1983	402	474	369	151	168	238	1107	926	-16.4%
Total	5181	5494	7631	5410	2281	474	560	418	176	184	258	1247	1036	-16.9%

*Source: Petroleum Information Corporation. Well data after August includes workovers. CES maintains additional data in the Indicators Database.

Production & Consumption

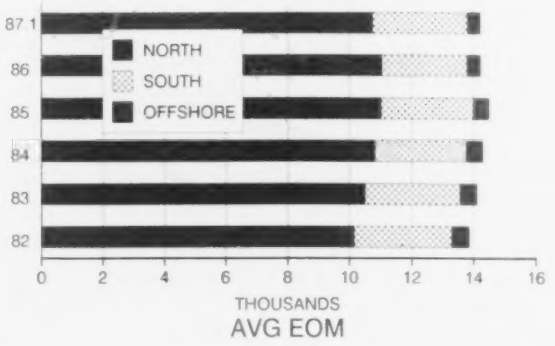
NATURAL GAS PRODUCTION

LOUISIANA



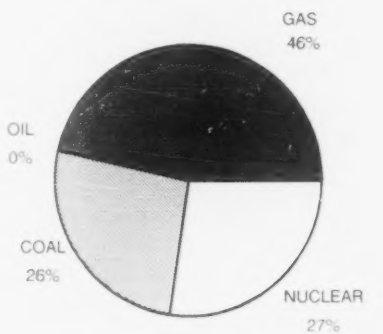
NATURAL GAS PRODUCING WELLS

LOUISIANA



LA. ELECTRICITY GENERATION

JULY 1987



Figures represent TOTAL except when otherwise noted

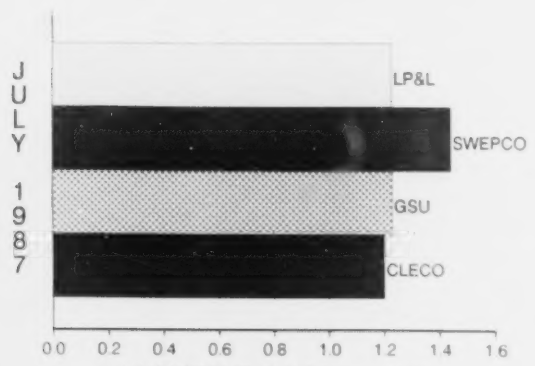
Totals may not add due to rounding

Indicator	1982	1983	1984	1985	1986	86.3	86.4	87.1	Apr	May	Jun	Year to Date Through Last Month Reported June 1986	Year to Date Through Last Month Reported June 1987	% Change
NATURAL GAS PRODUCTION														
(Avg. MMCF/day)														
North	1.03	1.00	1.05	0.96	0.99	0.93	1.04	1.02	1.01	0.98	NA	1.00	NA	
South	4.20	3.62	3.76	3.48	3.36	3.32	3.27	4.38	3.88	3.16	NA	3.42	NA	
Offshore	0.98	0.87	0.83	0.70	0.68	0.61	0.61	0.65	0.62	0.60	NA	0.74	NA	
Total	6.21	5.49	5.64	5.13	4.97	4.87	4.71	5.05	4.88	4.74	NA	5.16	NA	
NATURAL GAS PRODUCING WELLS														
North	10154	10502	10812	11026	11049	10964	10852	10766	10508	10928	NA	11190	NA	
South	3136	3065	2955	2976	2747	2683	2762	3048	3088	2657	NA	2771	NA	
Offshore	564	549	532	511	438	388	388	416	414	404	NA	487	NA	
Total	13855	14116	14299	14513	14185	14035	13808	13814	13596	13989	NA	14449	NA	
NATURAL GAS MARKETED PROD.														
(Total BCF)	6131	5332	5840	5159	4895r	1149r	1242r	1329r	425	422	402e	2504r	2581	3.1%
PRODUCING WELLS ABANDONED	1255	1043	1174	1966	2195	684	367	NA	NA	NA	NA	1144	NA	
MOTOR FUEL CONSUMPTION														
(Millions Gallons)														
Gasoline	2145	2151	2142	1949	1824	431	429	412	144	175	158	965	889	-7.9%
Gasohol	0	0	24	265	157	11	100	99	37	2	18	46	174	278.7%
Total Gasol. (Incl. Gasohol)	2145	2151	2167	2214	1981	442	529	510	181	178	176	1011	1045	3.3%
COAL LIGNITE PRODUCTION														
(Thousand short tons)	NC	NC	NC	NC	2217	600	426	630	256	246	235	1191	886	-25.6%
CRUDE OIL STOCK - E.O.M. Avg.														
(MMBBLS)	12.6	13.3	13.4	13.4	13	14.5	14.2	14.3	13.6	13.4	NA	12.5	NA	
ELECTRICITY PRODUCTION (GWH)*														
Gas Generated	35594	28311	29360	27735	26035	8688	6120	4132	1298	2154	2137	1127	9721	762.6%
Oil Generated	940	356	140	100	419	3	9	28	3	3	4	21	38	81.0%
Coal Generated	4998	8377	9830	13968	15587	794	4754	3178	735	1111	1206	6366	630	-90.1%
Nuclear Generated	0	0	0	2458	10638	1208	2210	2981	1399	1324	1072	5040	6776	34.4%
Total Generated	41532	37044	39330	44261	52679	10693	13093	10318	3435	4592	4419	22654	22764	0.5%

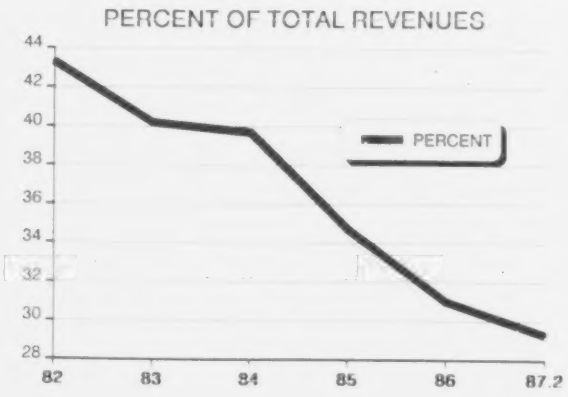
*1 GWh = 1 Million KWh
e = Estimated
r = Revised
NA = Not available from source
NC = Not collected from source

Prices & Revenues

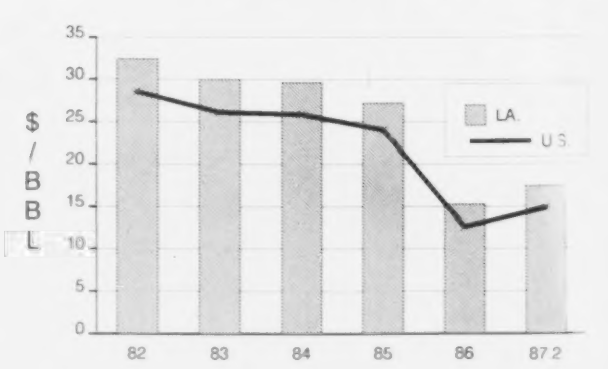
LA. INDUSTRIAL ELECTRICITY PRICES



LA. ENERGY REVENUES AS PERCENT OF TOTAL REVENUES



WELLHEAD PRICE OF OIL



Figures represent TOTAL except when otherwise noted

Totals may not add due to rounding

Indicator	1982	1983	1984	1985	1986	86.3	86.4	87.1	Apr	May	Jun	Year to Date Through Last Month Reported June 1986	Year to Date Through Last Month Reported June 1987	% Change
ELEC. PRICES (Cents/KWH) - Avg.														
Industrial														
CLECO	5.3	5.7	5.6	4.5	4.2	4.1	4.2	4.3	4.2	4.3	4.3	4.2	4.3	2.4%
GSU	3.5	3.7	3.5	5.1	4.3	4.2	4.0	3.5	3.9	4.9	4.3	4.6	3.9	-15.2%
LP&L	4.4	4.6	4.6	4.2	4.2	4.2	4.0	4.3	4.1	4.0	3.7	4.3	4.1	-4.7%
NOPSI	5.4	5.0	5.3	5.1	5.2	4.9	5.1	4.8	4.7	4.9	4.9	5.4	4.8	-11.1%
SWEPCO	3.8	4.6	4.8	5.2	5.2	5.1	5.1	5.1	5.0	4.9	5.0	5.3	5.0	-5.7%
WELLHEAD PRICE OF OIL														
($/BBL) - Avg..														
Louisiana	32.45	30.02	29.67	27.23	15.29	12.93	13.95	16.98	17.26	17.87	18.46	17.14	17.42	1.6%
U.S.	28.54	26.13	25.88	24.08	12.60	10.17	11.36	14.31	14.95	15.29	15.95	14.43	14.85	2.9%
CRUDE OIL SPOT MARKET PRICE														
(Avg. End of Week)														
Arab Light	NC	NC	NC	NC	11.58*	11.39	11.70	16.03	17.26	17.50	17.41	NR	16.71	
W. Texas Int. - Cushing	NC	NC	NC	NC	14.47**	13.85	15.36	18.29	18.54	19.43	20.15	NR	18.83	
Louisiana - St. James	NC	NC	NC	NC	14.56**	13.87	15.45	18.89	19.06	19.79	20.35	NR	19.31	
NAT. GAS PRICES ($/MCF)-Avg.														
Wellhead - U.S.	2.47	2.59	2.66	2.51	1.94r	1.78r	1.75r	1.87r	1.82	1.83	1.81	2.10	1.85	-11.9%
Interstate Indst. Sales (1)	3.75	4.28	4.12	3.91	3.25	3.06	2.95	3.40	3.08	3.28	3.28	3.49	3.31	-5.2%
La. Intrastate (2)	3.69	3.74	3.67	3.26	2.53	2.48	2.25	2.30	2.19	2.20	NA	2.69	NA	
PRINCIPAL ENERGY RELATED														
REVENUES (Millions $)														
Sev. - Oil & Condensate	776.8	664.1	653.5	598.3	390.3	69.9	84.8	74.6	41.0	27.8	20.1	235.6	163.4	-30.6%
Sev. - Natural Gas	147.5	132.7	131.3	121.1	126.1	30.2	32.6	31.4	11.1	9.5	6.2	63.3	58.3	-7.9%
Bonuses	59.3	47.0	68.0	32.1	15.9	2.0	3.1	3.1	0.7	0.9	2.3	10.8	7.0	-35.2%
Rentals	53.7	27.7	21.2	20.9	12.3	2.4	1.9	1.7	0.5	0.9	1.5	7.9	4.5	-43.0%
Royalties	482.7	444.9	436.1	379.1	304.5	83.1	55.6	71.0	20.0	21.9	19.5	165.8	132.3	-20.2%
Special Fuels Tax	25.5	27.1	41.1	52.3	57.6	13.8	14.2	13.0	5.4	4.6	4.2	29.7	27.0	-9.1%
Gasoline Tax	162.3	161.0	227.7	286.2	289.5	63.9	76.2	76.0	25.9	28.0	26.5	149.4	156.4	4.7%
Nat. Gas Franchise Tax	9.6	12.5	11.0	11.0	10.9	2.4	2.3	2.6	1.9	0.7	0.0	6.2	5.2	-16.1%
Total Energy Revenues	1719.4	1519.4	1502.9	1502.9	1211.6	268.2	271.3	276.0	107.0	94.2	81.2	672.1	558.4	-16.9%
TOTAL STATE REVENUES														
(Millions $)	3969.3	3775.0	3785.2	4335.6	3913.2	884.0	938.7	805.6	471.1	306.8	324.6	2090.5	1908.2	-8.7%
ENERGY RELATED REVENUES AS %														
OF STATE TOTAL	43.3	40.2	39.7	34.7	31.0	30.3	28.9	34.3	22.7	30.7	25.0	32.2	29.3	-9.0%

NA = Not available from source
NC = Not collected
NR = Not reported
* 5 month average
** 7 month average

1. Industrial Sale Price by Major Pipeline Companies.
2. Intrastate price is computed as the weighted average price charged by Louisiana Instrstate, Monterey, and Acadian gas transmission companies. Due to questionable figures, Acadian gas is not figured in the 1985 3rd quarter price.

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Louisiana Energy Indicators

Center for Energy Studies

Louisiana State University

Fall 1987

LOUISIANA: NET FOSSIL FUEL CONSUMER

BY ROBERT H. BAUMANN

Louisianans know and take pride in the fact that its state is among the national leaders in fossil fuel production. Lesser known is the fact that Louisiana is also a leader in the consumption of energy. In 1984, Louisiana ranked seventh nationally in total energy consumption but almost tied Alaska for first place in per capita energy consumption.

Virtually unknown is the fact that in 1985, Louisiana, for the first time since adequate statistics have been available, consumed more fossil fuel energy than it produced. (Net fossil fuels consumed for interstate electric sales were not included in the analysis). Only fifteen years earlier, in 1970, Louisiana produced four times the amount of fossil fuel energy it consumed.

The switch from being a net producer to net consumer of fossil fuels has largely come about due to dramatic declines in fossil fuel production. Louisiana currently produces less than one fifth of its 1969 peak production of oil and less than one fifth of its 1969 peak production of natural gas.

On the other hand, fossil fuel consumption has grown very modestly from 2,660.5 TBTU's in 1970 to 2,957.1 TBTU's in 1985. On a per capita basis, *Louisiana's total energy consumption actually declined by about eighteen percent from the mid 1970's to mid 1980's.* This was slightly better than the national decline in per capita energy consumption of approximately fifteen percent over the same time period.

What are some of the implications of this rapidly changing energy picture in Louisiana and what can we recommend for future energy management? We don't pretend to know all the answers nor even all the questions but we do propose a few suggestions.

Louisiana: A Leader in National Energy Policy Development

Louisiana benefits from increasing fossil fuel prices through bonuses, royalties, severance taxes and increased energy production employment. These same price increases have a negative impact on energy consumers. As Louisiana increasingly becomes a net consumer, the euphoria over how rising oil and gas prices benefit one shrinking sector of our economy will be subdued by how those same price increases negatively impact a growing sector of our economy.

While price changes will result in some perturbations, the central issue in terms of possible energy policy should be directed toward assuring an adequate energy supply. While energy supply is a national issue and requires a national energy policy, Louisiana can develop policies to assist in securing its own supply and in doing can take a leadership role in trying to establish a national energy policy.

Feedstock Diversification: A Positive Impact on Oil and Gas Supplies

The decisions by Louisiana's utilities to diversify their primary fuel sources to include nuclear and coal have had a positive impact on oil and gas supplies. While coal is a fossil fuel, it is far less useful than natural gas as a feedstock for many Louisiana process industries. Thus, the substition of coal and non-fossil fuels for oil and gas, where feasible, should be a part of our energy strategy.

The largest short-term gains to be made lie with electric power generation. In 1985, Louisiana utilities consumed 174.7 TBTU's of nuclear and coal fuels. As a substitute for oil and gas this represents a savings of six percent of our total oil and gas consumption. These savings should be even greater as the full capacity of our nuclear plants are realized.

Cogeneration: An Efficient Use of Fuel

Industrial cogenerated electric power and process steam are already a major component of Louisiana's energy picture. According to Keith Overdyke (DNR, 1985) plant capacity in operation or being constructed represents nearly thirteen percent of Louisiana's total electric power generation. While the decision by industry to cogenerate is pushed by economic factors, there are benefits to other consumers as cogeneration is considerably more efficient than electric power plants.

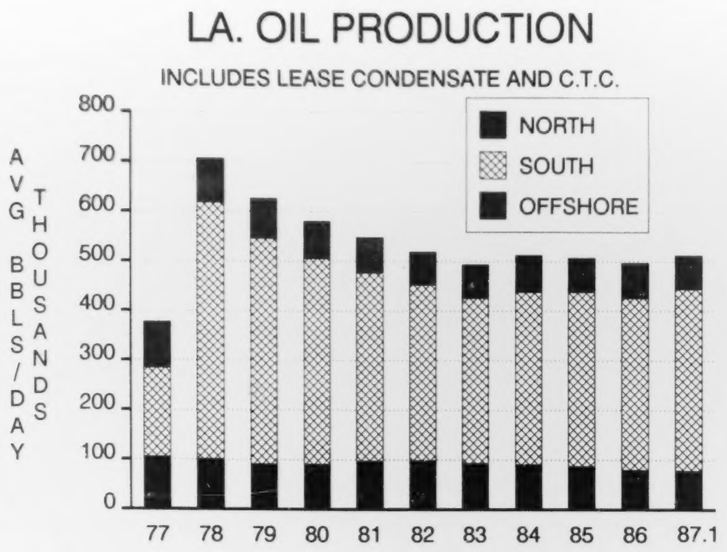
Given an average increased efficiency from .35 to .60 BTU of electricity produced per BTU of fossil fuel consumed, cogeneration in Louisiana has resulted in savings of approximately one percent of our fossil fuel consumption. The potential for additional savings is quite large. However, until the current excess capacity of electric utility power is consumed the benefits of

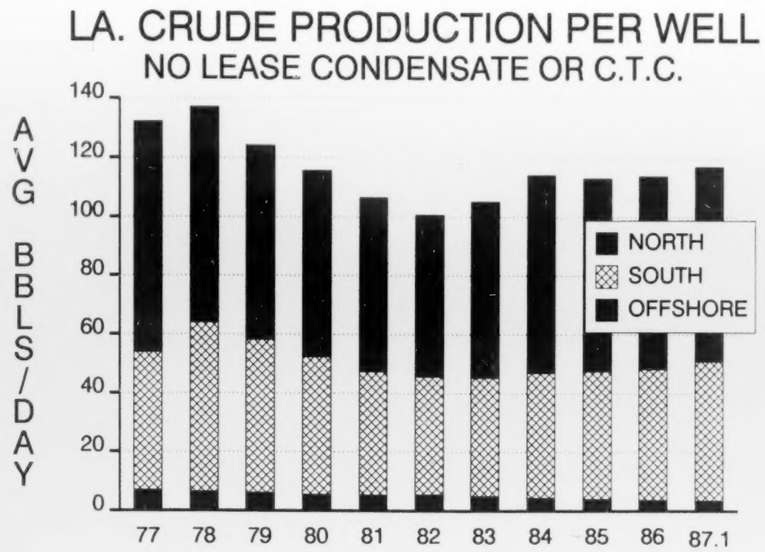
(Continued on back)

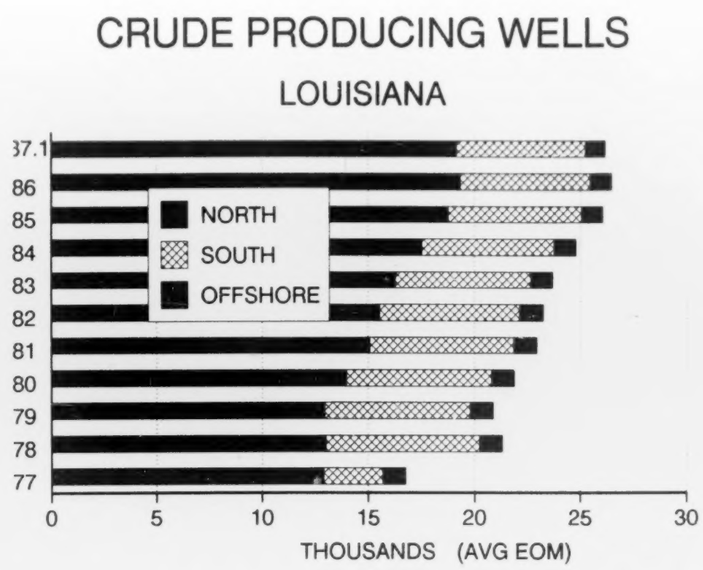
Data presented in this article were largely calculated from the *Louisiana Energy Historical Energy Database*, Louisiana State University, Center for Energy Studies.

Overdyke, K. *Cogeneration in Louisiana: Status.* Louisiana Department of Natural Resources. 1985.

Historical Presentation—Oil Production







Figures represent TOTAL
except when otherwise noted

Totals may not add due to rounding

Indicator	81.2	81.3	81.4	82.1	82.2	82.3	82.4	83.1	83.2	83.3	83.4	84.1
CRUDE OIL PRODUCTION - Incl. Condensate and C.T.C. - (Avg. MBBLS/Day)												
North	99	100	94	101	100	100	98	97	93	94	92	92
South	373	371	369	358	358	348	350	334	333	332	333	339
Offshore	69	69	70	67	69	69	64	65	70	70	65	73
CRUDE OIL PRODUCING WELLS												
North	14931	15202	15442	15383	15675	15603	15498	15745	16380	16526	16543	16821
South	6798	6824	6707	6651	6666	6598	6516	6436	6396	6377	6289	6220
Offshore	1095	1104	1125	1133	1128	1111	1075	1047	1048	1031	1023	1083
CRUDE OIL PRODUCTION PER WELL - No lease Condensate or C.T.C. - (Avg. BBLS/Day)												
North	5.7	5.5	5.4	5.6	5.5	5.6	5.5	5.3	5.0	5.0	4.8	4.8
South	42.6	40.9	40.7	39.5	40.2	39.9	40.5	39.2	40.6	40.5	40.6	41.2
Offshore	61.6	56.9	56.5	54.5	56.3	56.7	53.7	56.7	62.0	63.1	58.5	62.6

Indicator	84.2	84.3	84.4	85.1	85.2	85.3	85.4	86.1	86.2	86.3	86.4	87.1
CRUDE OIL PRODUCTION - Incl. Condensate and C.T.C. - (Avg. MBBLS/Day)												
North	91	90	91	89	87	89	85	89	82	75	77	79
South	352	350	351	362	348	345	346	357	358	339	329	366
Offshore	76	75	74	69	76	69	66	72	74	71	69	67
CRUDE OIL PRODUCING WELLS												
North	17311	17874	18169	18422	18778	19060	18909	19747	19501	19097	19037	19162
South	6384	6118	6244	6475	6267	6153	6217	6215	6112	5940	6200	6075
Offshore	1038	1022	976	960	1032	988	988	1023	994	999	985	941
CRUDE OIL PRODUCTION PER WELL - No lease Condensate or C.T.C. - (Avg. BBLS/Day)												
North	4.6	4.5	4.5	4.3	4.2	4.2	4.1	4.0	3.8	3.5	3.6	3.6
South	41.9	44.0	42.5	42.2	42.9	44.1	43.5	44.4	47.5	45.5	41.0	47.3
Offshore	68.0	68.6	70.3	66.9	69.0	65.7	61.0	64.7	68.6	64.9	64.7	66.1

(Continued from front)

cogenerated power as related to Louisiana's overall fossil fuel consumption will not be realized. By several estimates this should occur in the mid 1990's.

Conservation Still Needed

Economics also dictate that large industrial consumers of fossil fuels implement major energy conservation programs. The eighteen percent reduction in energy consumption per capita achieved by Louisiana over the past decade translates into a reduced demand of more than 90 million barrels of oil per annum. At $20 per barrel this reduces the annual Federal deficit by 1.8 billion dollars. Despite this substantial reduction there still exists, by virtually all assessments, significant potential for further conservation savings.

A major unaccounted for benefit of many of the industrial energy conservation programs is the reduction of environmental contaminants and associated environmental clean-up costs. Changing process designs, improving combustion efficiency, recycling, etc., only when justified by economic savings in the form of reduced fuel consumption, surpresses the full potential of investments in energy conservation. Some methods of providing economic credits for the reduced environmental costs could lead to further energy and environmental savings. A financial incentive that saves more in environmental clean-up costs than it deprives the state in tax revenue and, at the same time, results in additional energy savings should be quite beneficial, as well as politically popular. A successful model program could be used for implementation at the Federal level.

On the supply side, Louisiana will have to depend increasingly on fossil fuel imports from other states and nations. As a result we need to prepare very cogent arguments for changing federal policy to assure us of greater access to OCS oil and gas production. At the national level we need to be moderates with respect to the impact of U.S. policy on international crude oil supplies and prices as we balance the needs among Louisiana producers and consumers. Recognition of the importance of foreign crude to Louisiana, as well as to the U.S. generally, has already generated expressed concerns over secure supplies among our indigenous policy makers, as exemplified by state Senator Nunez's proposal through the South/West Regional Energy Council to form a Pan American Energy Alliance among Western Hemisphere producers.

Last, but not least, is what can be done about slowing the rate of decline of Louisiana oil and gas production? . . . But this is the topic of a future article.

SOURCES OF INDICATOR DATA

PUBLICATIONS

Consumer Price Index. U.S. Dept. of Labor. Bureau of Labor Statistics. Monthly.
- Price Indexes.

Electric Power Monthly. U.S. Dept. of Energy. Energy Information Administration.
- Electricity Production and Consumption Data

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- Wages. Number of Establishments. Employment Data

Louisiana Climatological Data. U.S. Dept. of Commerce. National Weather Service. Monthly.
- Heating and Cooling Degree Days (Not in this issue)

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- Drilling, Rig Activity, Oil and Gas Production. Refinery Runs and Stocks Data

Monthly Energy Review. U.S. Dept. of Energy. Energy Information Administration. Monthly.
- Crude Oil Prices

Monthly Motor Fuel Reported by States. U.S. Dept. of Transportation. Federal Highway Administration. Monthly.
- Motor Vehicle Fuel Consumption.

Natural Gas Monthly. U.S. Dept. of Energy. Energy Information Administration.
- Interstate Natural Gas Price Data
- Wellhead Price of Natural Gas—U.S. Production Data

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- Gasoline Prices.

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- Wellhead Price of Crude Oil—LA

Survery of Current Business. U.S. Dept. of Commerce. Bureau of Economic Analysis. Monthly.
- Gross National Product
- Consumer Price Index

OTHER SOURCES

Hughes Tool Company.
- Rig Activity.

Louisiana Department of Natural Resources. Office of Conservation.
- Advanced Data from the LOUISIANA PETROLEUM ACTIVITY REPORT

Louisiana Department of Revenue and Taxation. Statement of Net Collections and Distributions. (Mimeograph)
- Taxes and Revenues

Louisiana Public Service Commission. (Mimeograph)
- Electricity Data.
- Intrastate Natural Gas Prices

Petroleum Information Corporation. (Unpublished data.)
- Wells completed
- Wells abandoned

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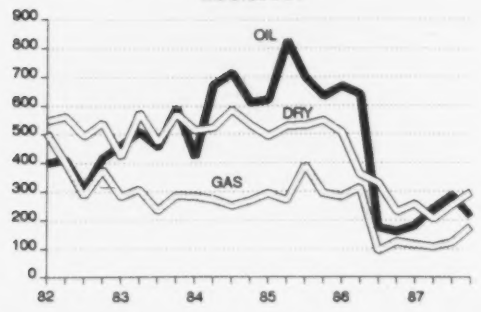
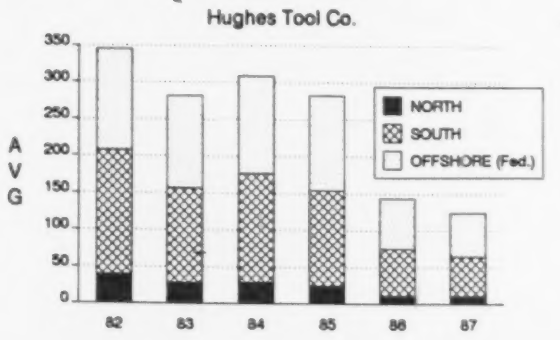
Drilling

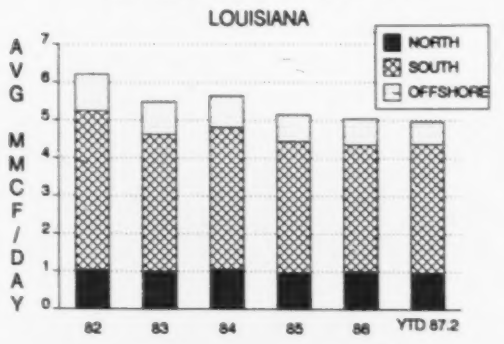
WELL COMPLETIONS



LA. RUNNING RIGS



NATURAL GAS PRODUCTION



Figures represent TOTAL except when otherwise noted

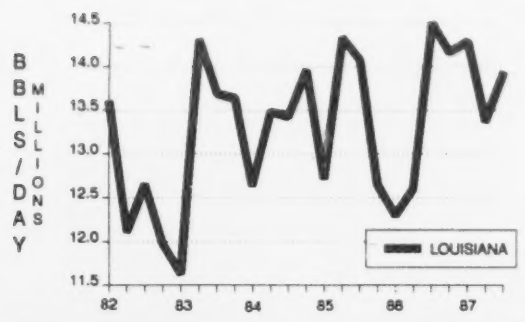
Totals may not add due to rounding

Indicator	1982	1983	1984	1985	1986	87.1	Apr	May	June	July	Aug	Sept	Year to Date Through Last Month Reported Sept 1986	Year to Date Through Last Month Reported Sept 1987	% Change
OIL WELLS COMPLETED*															
North	1122	1393	1792	2139	1092	79	19	58	42	55	45	42	1015	335	-67.0%
South	275	305	389	420	349	57	25	28	34	36	25	39	300	244	-18.7%
Offshore	137	319	239	215	197	45	13	17	10	19	13	12	173	129	-25.4%
Total	1534	2017	2420	2774	1638	181	57	98	86	110	83	93	1488	708	-52.4%
GAS WELLS COMPLETED*															
North	1017	588	680	721	426	53	11	16	27	23	22	11	357	163	-54.3%
South	323	234	190	281	214	31	8	10	7	6	12	8	205	82	-60.0%
Offshore	227	286	204	243	172	30	10	6	12	7	25	7	145	97	-33.1%
Total	1567	1108	1074	1245	812	114	29	32	46	36	59	26	707	342	-51.6%
DRY WELLS COMPLETED*															
North	1067	897	1195	1178	691	81	28	21	20	48	29	37	598	264	-55.9%
South	802	654	669	624	473	92	25	32	21	22	30	17	405	239	-41.0%
Offshore	273	489	293	296	259	82	12	22	21	20	21	29	213	207	-2.8%
Total	2142	2040	2157	2098	1423	255	65	75	62	90	80	83	1216	710	-41.6%
RUNNING RIGS (Avg.Hughes Tool)															
North	40	29	30	25	12	12	11	6	7	13	13	15	12	11	-8.3%
South	168	128	147	129	63	53	48	47	45	68	57	65	45	54	20.0%
Offshore (Federal)	137	125	132	129	69	51	45	51	56	64	78	80	49	59	20.4%
Total	345	282	309	283	143	115	102	104	108	144	148	160	106	124	17.0%

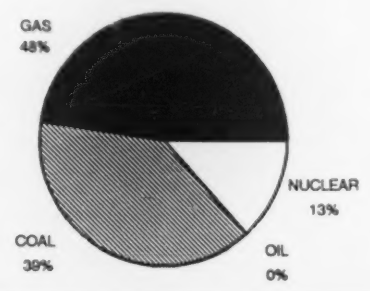
*Figures represent a reporting change from La. Office of Conservation reported figures to figures reported by Petroleum Information Corporation and the API. CES maintains additional data in the Indicators Database.

Production & Consumption

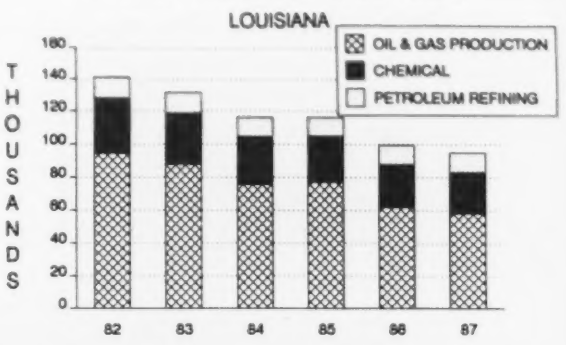
CRUDE OIL STOCKS



LA. ELECTRICITY GENERATION BY FUEL TYPE
OCTOBER 1987



ENERGY RELATED EMPLOYMENT



Figures represent TOTAL except when otherwise noted

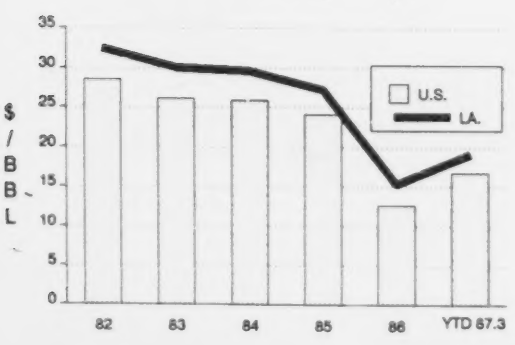
Totals may not add due to rounding

Indicator	1982	1983	1984	1985	1986	87.1	Apr	May	June	July	Aug	Sept	Year to Date Through Last Month Reported Sept 1986	Year to Date Through Last Month Reported Sept 1987	% Change
CRUDE OIL PRODUCTION (API)* (MBPD) - Avg.															
North	96	95	88	83	81	75	75	76	75	74	72	70	81	74	-8.6%
South (Incl. Fed. Offshore)	1165	1199	1286	1341	1277	1265	1268	1268	1267	1265	1255	1251	1273	1263	-0.8%
Total	1261	1294	1377	1429	1358	1340	1343	1344	1342	1339	1327	1321	1353	1337	-1.2%
NATURAL GAS MARKETED PROD. Louisiana (BCF)	6131	5332	5840	5159	4895	1329	425	422	406	398	388	384	3648	3753	2.9%
REFINERY RUNS (MMBPD) - Avg.	1.71	1.65	1.72	1.73	1.90	1.87	1.84	1.87	1.99	1.78	1.97	2.01	1.88	1.90	1.1%
CRUDE OIL STOCK - E.O.M.- Avg. (MMBBLS)	12.9	13.2	13.1	13.4	13.4	14.3	13.6	13.4	13.1	13.7	15.4	13.3	13.1	13.9	6.1%
MOTOR VEHICLE FUEL CONSUMP. (Million Gallons)															
Gasoline	2145	2151	2142	1949	1824	412	144	175	158	161	154	148	1396	1351	-3.2%
Gasohol	0	0	24	124	157	99	37	2	18	18	18	18	57	210	268.4%
Total Gasol. (Incl. Gasohol)															
Louisiana	2145	2151	2167	2072	1981	510	181	177	176	179	172	165	1453	1561	7.4%
U.S.	102735	104231	106331	108892	111934	25692	9013	9586	9460	9220	8732	7466	83827	79168	-5.6%
ELECTRICITY CONSUMPTION (GWh)**															
Residential	17992	17351	18550	19176	20239	4171	1174	1494	1972	2313	2496	2297	15754	15917	1.0%
Commercial	9959	10008	10941	11576	12685	2761	904	1068	1171	1232	1281	1286	9618	9703	0.9%
Industrial	24694	23836	25900	24067	22312	5437	1845	1864	1931	1957	2094	1975	16833	17103	1.6%
Other	4052	4072	4247	3993	3885	825	318	323	340	361	295	298	2932	2860	-2.5%
Total	56697	55267	59638	58812	59121	13293	4240	4748	5414	5864	6166	5856	45137	45581	1.0%
ELECTRICITY PRODUCTION (GWh)**															
Gas Generated	35594	28311	29360	27735	26035	4132	1298	2154	2137	2485	2934	2685	19915	17825	-10.5%
Oil Generated	940	356	140	100	419	28	3	3	4	5	1	2	410	46	-88.8%
Coal Generated	4998	8377	9830	13968	15587	3178	735	1111	1206	1406	1489	1432	10833	10557	-2.5%
Nuclear Generated	0	0	0	2458	10638	2981	1399	1324	1072	1452	1290	672	8428	10198	21.0%
Total Generated	41532	37044	39330	44261	52679	10318	3435	4592	4419	5353	5714	4795	39585	38626	-2.4%

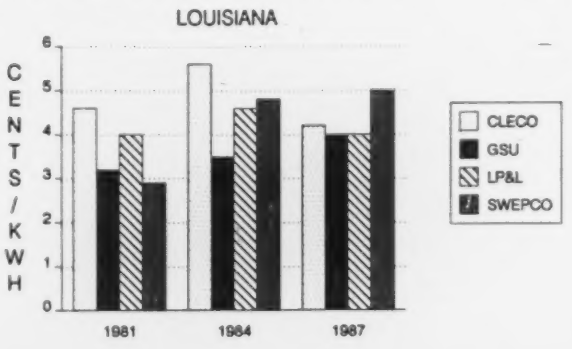
*Figures represent a reporting change from La. Office of Conservation reported figures to figures reported by Petroleum Information Corporation and the API.
**1 GWh = 1 Million KWh

Prices & Revenues

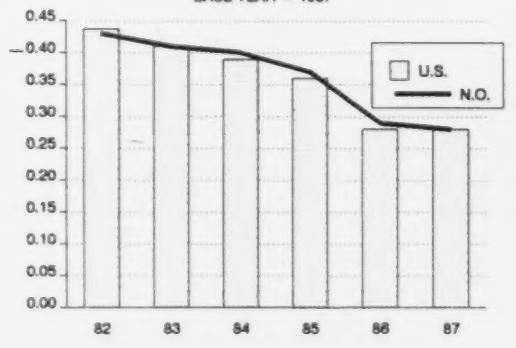
AVERAGE WELLHEAD PRICE OF OIL



INDUSTRIAL ELECTRICITY PRICES



GASOLINE PRICES IN CONSTANT $



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Totals may not add due to rounding

Indicator	1982	1983	1984	1985	1986	87.1	Apr	May	June	July	Aug	Sept	Year to Date Through Last Month Reported Sept 1986	Year to Date Through Last Month Reported Sept 1987	% Change
ELEC. PRICES (Cents/KWH) - Avg. Industrial															
CLECO	5.3	5.7	5.6	4.5	4.2	4.3	4.2	4.3	4.3	4.1	4.0	4.1	4.1	4.2	2.4%
GSU	3.5	3.7	3.5	5.1	4.3	3.5	3.9	4.9	4.3	4.2	4.1	4.1	4.4	4.0	-9.1%
LP&L	4.4	4.6	4.6	4.2	4.2	4.3	4.1	4.0	3.7	4.2	3.9	4.1	4.2	4.1	-2.4%
SWEPCO	3.8	4.6	4.8	5.2	5.2	5.1	5.0	4.9	5.0	4.9	4.8	4.9	5.2	5.0	-3.8%
WELLHEAD PRICE OF OIL ($/BBL) - Avg.															
Louisiana	32.44r	30.02	29.67	27.22r	15.32r	16.98	17.26	17.87	18.46	19.37	19.51	18.43	15.74	17.98	14.2%
U.S.	28.52r	26.19r	25.88	24.09r	12.51r	14.31	14.95	15.29	15.95	16.88	17.06	16.29	12.85	15.48	20.5%
NAT. GAS PRICES ($/MCF)-Avg.															
Wellhead - U.S.	2.47	2.59	2.66	2.53	1.94	1.83	1.82	1.76	1.75	1.74	1.71	1.68	1.79	1.44	-19.6%
Interstate Indst. Sales (1)	3.75	4.28	4.12	3.91	3.25	3.40	3.08	3.28	3.28	3.30	3.20	3.28	3.35	3.29	-1.8%
La. Intrastate (2)	3.69	3.74	3.67	3.26	2.53	3.21	2.19	2.20	2.20	2.25	2.12	2.08	2.62	2.22	-15.3%
PRINCIPAL ENERGY RELATED REVENUES (Millions $)															
Sev. - Oil & Condensate	776.8	664.1	653.5	598.2	390.3	74.6	41.0	27.8	20.1	31.4	24.7	36.2	305.5	255.7	-16.3%
Sev. - Natural Gas	147.5	132.7	131.3	121.1	126.1	31.4	11.1	9.5	6.2	9.2	9.6	7.9	93.6	85.0	-9.2%
Bonuses	59.3	47.0	68.0	32.1	15.9	3.1	0.7	0.9	2.3	4.8	0.0	6.5	12.8	10.2	-20.3%
Rentals	53.7	27.7	21.2	20.9	12.3	1.7	0.5	0.9	1.5	0.0	0.2	0.6	10.3	5.3	-48.5%
Royalties	482.7	444.9	436.1	379.1	304.5	71.0	20.0	21.9	19.5	20.6	18.9	0.0	248.9	171.8	-31.0%
Special Fuels Tax	25.5	27.1	41.1	52.3	57.6	12.8	5.4	4.6	4.2	5.5	4.4	4.0	43.5	40.9	-6.0%
Gasoline Tax	162.3	161.0	227.7	286.2	289.5	76.0	25.9	28.0	26.5	27.8	27.3	26.7	213.3	238.2	11.7%
Nat. Gas Franchise Tax	9.6	12.5	11.7	11.0	10.9	2.6	1.9	0.7	0.0	1.0	1.0	0.0	8.6	7.2	-16.3%
Total Energy Revenues	1717.4	1517.0	1590.6	1500.9	1211.6	276.0	107.0	94.2	81.2	100.6	86.2	104.3	940.3	849.5	-9.7%
TOTAL STATE REVENUES (Millions $)	3969.3	3775.0	3785.2	4335.6	3913.2	805.6	471.1	306.8	324.6	332.5	277.9	330.4	2974.5	2849.0	-4.2%
ENERGY RELATED REVENUES AS % OF STATE TOTAL	43.3	40.2	42.0	34.6	31.0	34.3	22.7	30.7	25.0	30.3	31.0	31.6	31.6	29.8	-5.7%
GROSS NAT. PROD. (Billions $)	3066.5	3337.9r	3772.2r	4010.3r	4235.0r	4377.7	4445.1	4445.1	4445.1	4520.5	4520.5	4520.5	4217.3	4447.8	5.5%
PROD. PRICE INDEX - U	299.3	303.1	310.3	308.7	299.8	301.9	305.0r	307.1r	308.2r	310.2	310.5	310.4	300.2	306.4	2.1%
CONS. PRICE INDEX - U	289.1	298.4	311.1	322.2	328.4	334.5	337.7	338.7	340.1	340.8	342.7	344.4	327.6	338.6	3.4%
CPI - ENERGY - U	416.1	419.8r	423.4r	426.4r	370.2	360.5	366.2	366.8	372.2	372.5	378.7	376.8	378.4	368.3	-2.7%

U = Unadjusted r = Revised

3/21/88 U2730-1

Louisiana Energy Indicators

Center for Energy Studies

Louisiana State University

Spring 1988

A PAN AMERICAN ENERGY ALLIANCE

By Lori Cameron
Counsel for Planning and Energy, Louisiana Senate

The United States is indisputably dependent on foreign oil to keep our lights on, our cars rolling and, indeed, our economy functioning. However, with a thoughtful energy policy, this nation can be dependent without being vulnerable.

Unfortunately today the U. S. is both dependent and vulnerable.

The South/West Energy Council (S/WEC), chaired by Louisiana Senate President Samuel B. Nunez, Jr., is an organization of eight oil and gas producing states. S/WEC is proposing a Pan American Energy Alliance as one element of a meaningful domestic energy policy. This proposal is born of the producing states' recognition of the importance of world oil price stability in light of the boom-and-bust oil cycle which has proved so devastating to businesses, national economies and state governments alike.

To the producing states, the recent energy price bust, which saw oil prices drop from 32 dollars a barrel to 10 dollars over a four-month period has meant fiscal crises and the highest unemployment rates in the nation. Even sizable drilling incentives offered by state governments couldn't budge the rig count which dove with the price drop.

An agreement among the primary producing nations of the Western Hemisphere, e.g., Venezuela, Mexico and the U.S. to assure a secure supply of oil in times of crisis would bring a measure of stability to the world's oil market by neutralizing threats of an embargo. As the figure indicates, both Venezuela and Mexico have at least twice the oil reserves of the U.S.

A Pan American Energy Alliance would provide for our national defense by assuring a secure supply of oil from within our own sphere of influence. Further, an Alliance would encourage trade among the democratic neighbors of the Western Hemisphere, improving Pan American relations, and the Latin American national debt situation.

S/WEC is not suggesting that the U.S. exclusively trade within this hemisphere; nor is it suggesting that the U.S. abandon its present commitments. A Pan American Energy Alliance could complement activities like those of the International Energy Agency (I.E.A.) in which the U.S. participates with a number of primarily European allies.

Since the United States has the

(Continued on back)

1987 Western Hemisphere Crude Oil Reserves

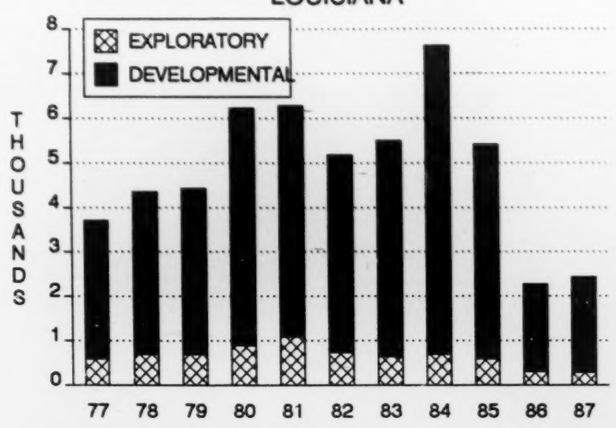
*(Does not include Orinoco Belt heavy crude estimated at 267 billion barrels.)

Source: World Oil, August 1987.

Historical Presentation - Drilling

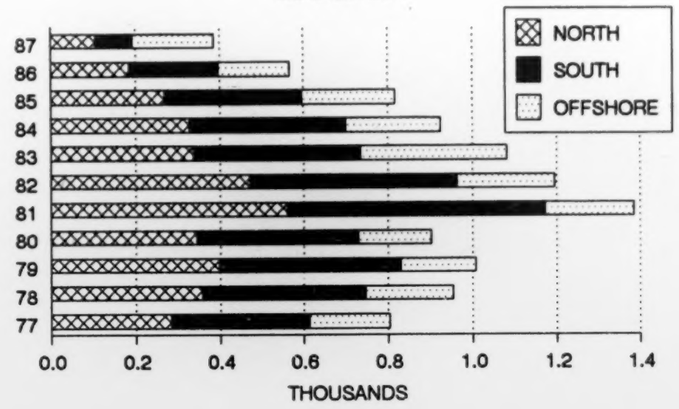
DRILLING PERMITS ISSUED

LOUISIANA



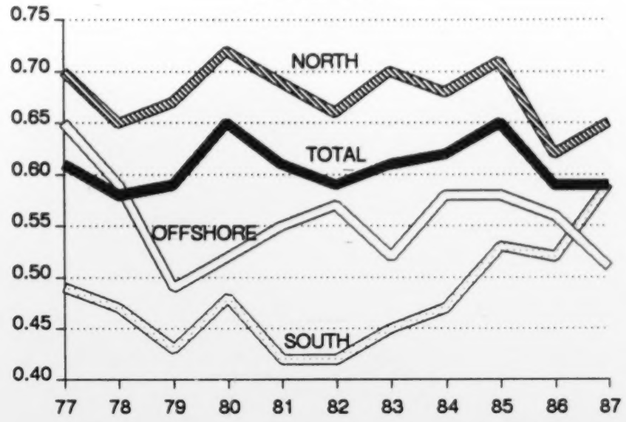
EXPLORATORY WELLS DRILLED

LOUISIANA



WELL COMPLETION SUCCESS RATIO

LOUISIANA



Figures represent TOTAL
except when otherwise noted

Totals may not add due to rounding

Indicator	82.1	82.2	82.3	82.4	83.1	83.2	83.3	83.4	84.1	84.2	84.3	84.4
DRILLING PERMITS ISSUED												
Exploratory	182	176	189	180	95	131	197	222	131	176	187	208
Developmental	988	1260	1113	1093	852	988	1384	1625	1225	1403	2184	2117
Total	1170	1436	1302	1273	947	1119	1581	1847	1356	1579	2371	2325
EXPLORATORY WELLS DRILLED - TOTAL*												
North	144	124	99	104	76	94	88	80	78	99	70	82
South	149	120	115	108	86	107	109	94	88	116	85	81
Offshore (Incl. Fed. Water)	72	54	61	46	49	152	90	58	60	74	55	37
Total	365	298	275	258	211	353	287	232	226	289	210	200
WELL COMPLETION SUCCESS RATIO*												
North	0.70	0.64	0.64	0.65	0.75	0.67	0.70	0.64	0.63	0.75	0.66	0.66
South	0.40	0.41	0.41	0.45	0.44	0.44	0.48	0.42	0.48	0.45	0.47	0.47
Offshore (Incl. Fed. Water)	0.67	0.66	0.47	0.47	0.54	0.54	0.38	0.60	0.48	0.60	0.67	0.54
Total	0.59	0.57	0.52	0.52	0.55	0.55	0.52	0.55	0.53	0.60	0.60	0.56

Indicator	85.1	85.2	85.3	85.4	86.1	86.2	86.3	86.4	87.1	87.2	87.3	87.4
DRILLING PERMITS ISSUED												
Exploratory	116	154	200	129	76	64	72	86	49	61	81	93
Developmental	1157	1104	1449	1101	763	344	402	474	369	557	638	584
Total	1273	1258	1649	1230	839	408	474	560	418	618	719	677
EXPLORATORY WELLS DRILLED - TOTAL*												
North	87	66	62	54	83	36	37	30	40	21	21	23
South	89	98	75	65	96	49	38	28	39	17	16	16
Offshore (Incl. Fed. Water)	50	69	44	58	54	46	37	32	61	38	41	54
Total	226	233	181	177	233	131	112	90	140	76	78	93
WELL COMPLETION SUCCESS RATIO*												
North	0.69	0.73	0.71	0.67	0.73	0.77	0.42	0.55	0.64	0.69	0.64	0.62
South	0.49	0.52	0.55	0.54	0.57	0.53	0.47	0.49	0.49	0.59	0.65	0.62
Offshore (Incl. Fed. Water)	0.55	0.64	0.65	0.46	0.55	0.66	0.50	0.53	0.49	0.56	0.54	0.46
Total	0.58	0.63	0.64	0.56	0.62	0.65	0.45	0.53	0.54	0.63	0.62	0.58

* Source: Petroleum Information Corporation
NA = Not available from source

(Continued from front)

largest strategic petroleum reserve by far of the I.E.A. member nations, others would look to us for oil in times of supply crisis. The Pan American Energy Alliance would allow us, in turn, to look to our neighbors for help.

A Pan American Energy Alliance might be structured as a multilateral treaty or even a number of bilateral agreements. Realizing that such agreements would be the province of the State Department and others within the Executive branch, S/WEC is reluctant to restrict the proposal by suggesting specific terms or vehicles. However, it is recommended that existing organizations like the Organization of American States (OAS) be used as forums to reach such accords.

S/WEC believes that a Pan American Energy Alliance offers economic stability in a precarious environment. It provides enhanced energy security for the U.S. It provides trade opportunities with our neighbors. It does not shut doors; it demands international dialogue. It is a workable proposal.

Certainly though, this proposal is not a panacea. It would be but one part of a successful energy policy. National energy policy must be based on a productive domestic oil and gas industry, continuous strides in conservation and the development of alternative sources of energy to complement a Pan American Energy Alliance.

There's a distinction, S/WEC believes, to be made between energy dependency and energy vulnerability. As part of a national energy policy a Pan American Energy Alliance recognizes our dependence but moves to overcome our vulnerability.

SOURCES OF INDICATOR DATA

PUBLICATIONS

Consumer Price Index. U.S. Dept. of Labor. Bureau of Labor Statistics. Monthly.
Price Indexes.

Electric Power Monthly. U.S. Dept. of Energy. Energy Information Administration.
Electricity Production and Consumption Data

Employment and Total Wages Paid by Employers Subject to the Louisiana Employment Security Law. Louisiana Dept. of Labor. Office of Management and Finance Research and Statistics Unit. Quarterly.
Wages. Number of Establishments. Employment Data

Louisiana Climatological Data. U.S. Dept. of Commerce. National Weather Service. Monthly.
Heating and Cooling Degree Days (Not in this issue)

Louisiana Petroleum Activity Report. Monthly.
Drilling. Rig Activity. Oil and Gas Production. Refinery Runs and Stocks Data

Monthly Energy Review. U.S. Dept. of Energy. Energy Information Administration. Monthly.
Crude Oil Prices.

Monthly Motor Fuel Reported by States. U.S. Dept. of Transportation. Monthly.
Federal Highway Administration Gasoline Consumption - U.S.

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Interstate Natural Gas Price Data
Wellhead Price of Natural Gas - U.S.
Production Data

Oil & Gas Journal. Penn Well Publishing Company. Tulsa, Oklahoma.
Gasoline Prices.

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Survey of Current Business. U.S. Dept. of Commerce. Bureau of Economic Analysis. Monthly.
Gross National Product
Consumer Price Index

World Oil. Gulf Publishing Company. Houston, Texas.
Wells Drilled
Wells Completed

OTHER SOURCES

Hughes Tool Company
Rig Activity

Louisiana Department of Natural Resources. Office of Conservation.

Louisiana Department of Revenue and Taxation. Statement of Net Collections and Distributions. (Mimeograph)
Taxes and Revenues

Louisiana Public Service Commission. (Mimeograph)
Electricity Data
Intrastate Natural Gas Prices

Petroleum Information Corporation (Unpubiished data.)
Wells Completed
Wells Abandoned

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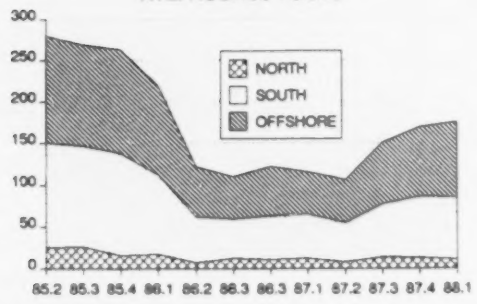
Drilling

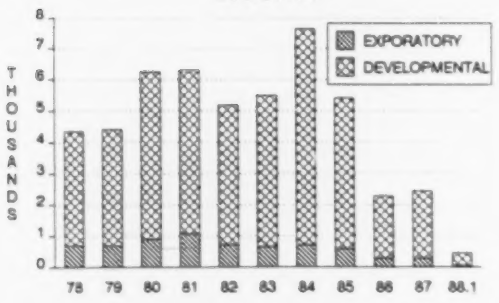
RUNNING RIGS - LA

AVE. HUGHES TOOLS



DRILLING PERMITS ISSUED

LOUISIANA



WELLS DRILLED

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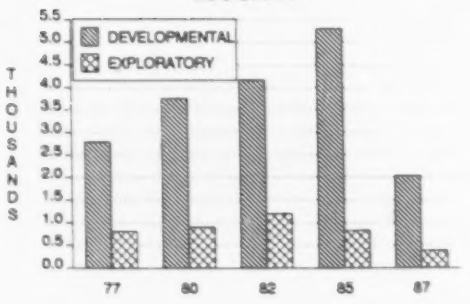


Figures represent TOTAL except when otherwise noted

Totals may not add due to rounding

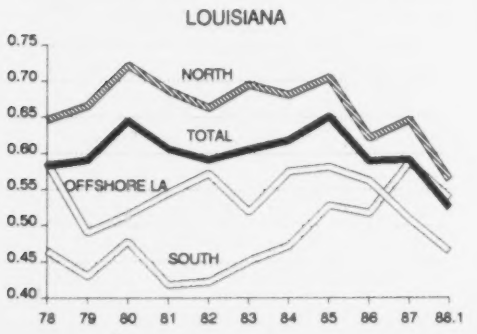
Indicator	1983	1984	1985	1986	1987	87.2	87.3	87.4	Jan	Feb	Mar	Year to Date Through Last Month Reported March 1987	Year to Date Through Last Month Reported March 1988	% Change
EXPLORATORY WELLS - LA.* (As reported)														
Oil	66	59	62	34	20	4	2	4	2	1	1	10	4	-60.0%
Gas	97	82	100	63	56	14	17	12	7	6	2	13	15	15.4%
Dry	821	704	665	423	350	64	79	97	49	30	26	110	105	-4.5%
DEVELOPMENTAL WELLS - LA.* (As reported)														
Oil	1950	2361	2712	1604	901	237	284	209	64	56	62	171	182	6.4%
Gas	1011	992	1145	768	462	94	104	163	62	38	39	101	139	37.6%
Dry	1219	1453	1433	1000	666	138	174	199	84	63	60	155	207	33.5%
WELL COMPLETIONS - LA.* (As reported)														
North	2878	3667	4038	2209	1106	237	312	344	112	59	57	213	228	7.0%
South	1193	1248	1325	1036	740	190	195	175	76	82	64	180	222	23.3%
Offshore (Incl. fed. water)	1094	736	754	628	598	123	153	165	80	53	69	157	202	28.7%
Total	5165	5651	6117	3873	2444	550	660	684	268	194	190	550	652	18.5%
RUNNING RIGS (Avg. Hughes Tool)														
North	29	30	25	12	12	8	14	13	10	14	10	12	11	-8.3%
South	128	147	129	63	59	47	63	73	81	72	70	53	74	39.6%
Offshore (Federal)	125	132	129	69	65	51	74	83	91	89	90	51	90	76.5%
Total	283	310	283	143	135	105	151	169	182	176	169	115	176	53.0%
DRILLING PERMITS ISSUED														
Exploratory	645	702	599	298	284	61	81	93	18	17	21	49	56	14.3%
Developmental	4849	6929	4811	1983	2148	557	638	584	125	126	137	369	388	5.1%
Total	5494	7631	5410	2281	2432	618	719	677	143	143	158	418	444	6.2%

*Source: Petroleum Information Corporation. Well data after August includes workovers. CES maintains additional data in the Indicators Database.

Production

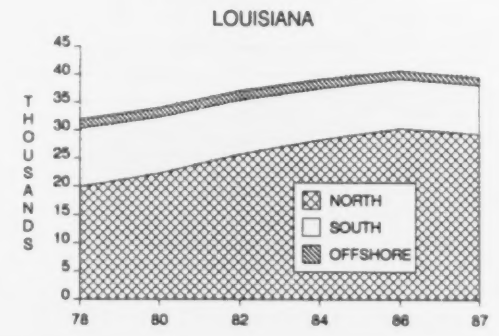
WELL COMPLETION SUCCESS RATIO

LOUISIANA



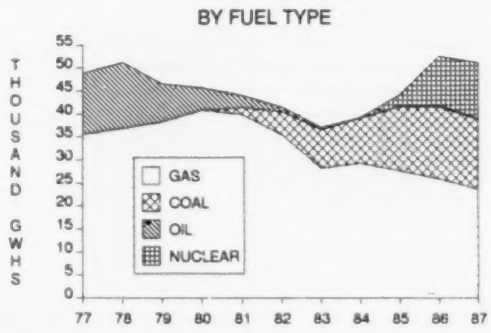
PRODUCING WELLS

LOUISIANA



ELECTRICITY GENERATION

BY FUEL TYPE



Figures represent TOTAL except when otherwise noted

Totals may not add due to rounding

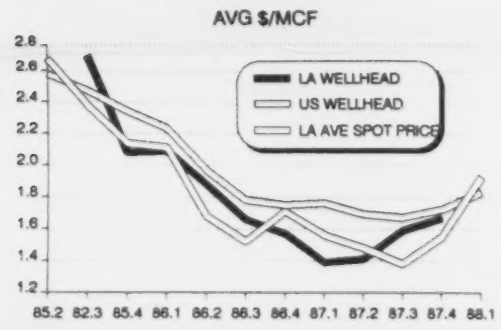
Indicator	1983	1984	1985	1986	1987	87.2	87.3	87.4	Jan	Feb	Mar	Year to Date Through Last Month Reported March 1987	Year to Date Through Last Month Reported March 1988	% Change
NATURAL GAS PRODUCING WELLS														
North	10502	10812	11026	11049	10720	10699	10668	10771	10863	10754	10709	10766	10775	0.1%
South	3065	2955	2976	2747	2890	2790	2570	2618	2565	2555	2551	3048	2557	-16.1%
Offshore	549	532	511	438	412	406	405	426	424	432	439	416	432	3.8%
Total	14116	14299	14513	14185	13847	13758	13708	13815	16852	13741	13699	13953	14764	5.8%
CRUDE OIL PRODUCING WELLS														
North	16299	17544	18792	19346	18630	18544	18490	18383	18224	17668	18425	19162	18106	-5.5%
South	6374	6241	6278	6117	5897	5778	5874	5861	5766	5763	5916	6075	5815	-4.3%
Offshore	1037	1030	996	1000	963	972	965	975	1031	993	984	941	1003	6.6%
Total	23710	24815	26066	26300	25415	25294	25269	25219	25021	24424	25325	25877	24923	-3.7%
NATURAL GAS PRODUCTION - Casinghead Included (Avg. MMCF/day)														
North	1.00	1.05	0.96	0.99	0.97	0.97	0.92	1.00	1.00	1.05	1.07	1.02	1.04	2.0%
South	3.64	3.76	3.48	3.36	3.68	3.39	3.12	3.16	3.14	3.25	3.30	3.93	3.23	-17.8%
Offshore	0.87	0.83	0.70	0.68	0.61	0.60	0.59	0.66	0.69	0.64	0.64	0.60	0.66	9.4%
Total	5.49	5.64	5.13	4.97	4.81	4.75	4.57	4.82	4.83	4.93	5.01	4.93	4.92	-0.1%
CRUDE OIL PRODUCTION - Lease Condensate Included (Avg. MBBLS/day)														
North	93.8	90.7	87.6	80.5	76.7	74.7	73.8	79.5	72.6	78.4	76.5	80.2	75.8	-5.4%
South	332.9	348.0	350.2	345.9	333.7	334.4	318.1	316.4	323.3	318.8	319.2	358.4	320.4	-10.6%
Offshore	67.7	74.2	70.0	71.4	66.6	71.3	66.6	60.9	68.6	71.1	72.0	67.8	70.6	4.1%
Total	494.3	512.9	507.8	492.0	469.3	476.4	458.5	456.8	464.5	468.2	467.7	506.4	466.8	-7.8%
COAL LIGNITE PRODUCTION (Thousand Short Tons)	NC	NC	NC	2254	2774	735	730	668	229	213	264	641	706	10.1%

NC = Not Collected

Employment, Prices & Revenues

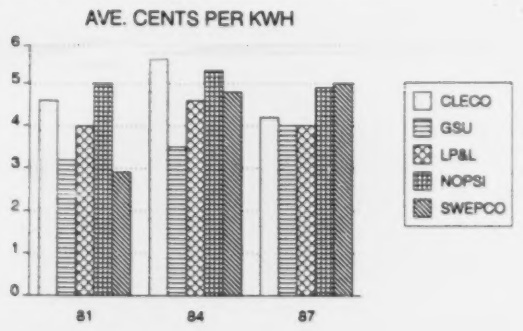
NATURAL GAS PRICES

AVG $/MCF



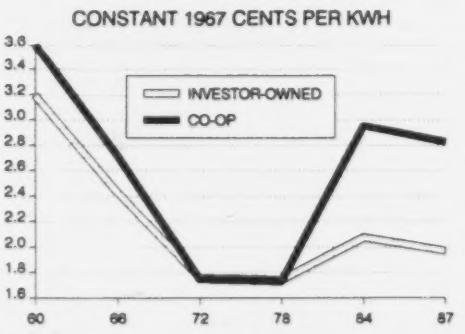
INDUSTRIAL ELECTRICITY PRICES

AVE. CENTS PER KWH



RESIDENTIAL ELECTRIC PRICES

CONSTANT 1967 CENTS PER KWH



Figures represent TOTAL except when otherwise noted

Totals may not add due to rounding

Indicator	1983	1984	1985	1986	1987	87.2	87.3	87.4	Jan	Feb	Mar	Year to Date Through Last Month Reported March 1987	Year to Date Through Last Month Reported March 1988	% Change
EMPLOYMENT (Thousands) - Avg.														
Oil & Gas Extraction (SIC13)	88.0	75.6	77.1	61.9	55.8	56.9	59.7	55.9	52.1	52.0	52.2	50.7	52.1	2.8%
Chemicals & Allied Products (SIC28)	30.9	28.9	28.0	26.1	25.2	25.2	25.3	25.3	25.4	25.4	25.4	25.1	25.4	1.2%
Petroleum Refining (SIC29)	12.4	11.6	11.1	11.5	11.6	11.7	11.8	11.7	11.4	11.4	11.4	11.4	11.4	0.0%
Total La. Employment	1657.0	1751.9	1744.2	1727.3	1728.7	1702.5	1765.9	1765.4	1672.6	1676.5	1678.1	1681.0	1675.7	-0.3%
WELLHEAD PRICE OF OIL ($/BBL) - Avg.														
Louisiana	30.02	29.67	27.22r	15.32r	17.98	17.86	19.10	17.97	16.34	16.25	15.56	16.98	16.05	-5.5%
U.S.	26.19r	25.88	24.09r	12.51r	15.42	15.40	16.73	15.23	13.64	13.41	12.96	14.31	13.34	-6.8%
CRUDE OIL SPOT MARKET PRICE (Avg. End of Week)														
Arab Light	NC	NC	NC	11.58*	16.51	17.39	17.35	16.68	15.76	15.10	13.59	16.03	14.82	-7.5%
W. Texas Int. - Cushing	NC	NC	NC	14.47**	18.80	10.53	11.22	18.81	17.07	16.62	16.39	18.29	16.69	-8.7%
Louisiana - St. James	NC	NC	NC	14.56**	10.51	10.54	11.22	19.16	17.60	16.86	16.43	18.89	16.96	-10.2%
NAT. GAS PRICES ($/MCF)-Avg.														
Wellhead - U.S.	2.59	2.66	2.51	1.94r	1.71	1.69	1.67	1.72	1.83	1.82	NA	1.76	NA	NA
Interstate Indst. Sales (1)	4.28	4.12	3.91	3.25	3.19	3.21	3.26	2.88	2.82	2.83	2.76	3.40	2.80	-17.5%
Ave. Spot Price	NA	NA	2.45	1.75	1.49	1.48	1.38	1.55	2.04	2.01	1.79	1.56	1.95	24.8%
PRINCIPAL ENERGY RELATED REVENUES (Millions $)														
Sev. - Oil & Condensate	664.1	653.5	598.3	390.3	345.6	88.2	92.3	89.8	53.8	18.1	31.1	74.6	103.0	38.1%
Sev. - Natural Gas	132.7	131.3	121.1	126.1	112.7	26.9	26.7	27.6	10.3	6.7	13.1	31.4	30.1	-4.1%
Bonuses	47.0	68.0	32.1	15.9	25.5	3.9	11.2	7.3	1.6	3.6	1.4	3.1	6.6	112.9%
Rentals	27.7	21.2	20.9	12.3	6.7	2.8	0.8	1.4	0.8	0.5	0.7	1.7	2.0	17.6%
Royalties	444.9	436.1	379.1	304.5	253.8	61.4	61.5	60.0	19.4	19.3	23.0	71.0	61.7	-13.1%
Special Fuels Tax	27.1	41.1	52.3	57.6	55.2	14.2	13.9	14.3	5.2	4.2	4.0	12.8	13.4	4.7%
Gasoline Tax	161.0	227.7	286.2	289.5	311.6	80.4	81.8	73.4	27.0	24.2	24.1	76.0	75.3	-0.9%
Nat. Gas Franchise Tax	12.5	11.7r	11.0	10.9	9.3	2.6	2.0	2.1	0.8	1.7	0.003	2.6	2.5	-3.7%
Total Energy Revenues	1519.5r	1592.6r	1502.9	1211.6	1126.4	282.4	291.1	276.9	118.9	78.3	97.4	276.0	294.6	6.7%
TOTAL STATE REVENUES (Millions $)	3775.0	3785.2	4335.6	3913.2	3783.6	1102.5	940.8	934.6	340.2	274.4	272.4	805.6	887.0	10.1%
ENERGY RELATED REVENUES AS % OF STATE TOTAL	0.0	0.0	34.7	31.0	29.8	25.6	30.9	29.6	35.0	28.5	35.8	34.3	33.2	-3.1%

NA = Not available from source
NC = Not collected
NR = Not reported
* 5 month average
** 7 month average

7/13/88

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Louisiana Energy Indicators

Spring 1988

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Cogeneration Requires Creative Strategies

By Sharon Rochford, Ph.D.

EDITOR'S NOTE: *Rochford was head of the Economics and Rate Analysis Division of the Louisiana Public Service Commission at the time this article was written. The views expressed are her own.*

The subject of cogeneration, the process by which an industrial generating unit produces both process steam and electricity, has received a lot of attention in Louisiana in the past few years.

It is attractive to Louisiana's major industries because the plant processes employed by these industries are particularly well-suited to cogeneration. Also, increased competitive pressures and the existence of the current "gas bubble" have increased incentives for these industries to cogenerate.

Yet, the state's electric utilities, burdened with excess capacity and facing rate increases to pay for newly constructed coal and nuclear units, know that their problems will be exacerbated by the loss of large industrial customers to cogeneration.

Given all this, the controversy cogeneration generates is not surprising.

The Effect of Legislation

Cogeneration is not new, but a major contributing factor to its build-up was the Public Utilities Regulatory Policy Act (PURPA) passed in 1978. Under this legislation, electric utilities must purchase power generated by qualified facilities, thus ensuring industrial cogenerators of a market for their excess power. PURPA also requires utilities to provide standby and maintenance power to cogenerators, thus reducing some of the risk of self-generation.

In addition to PURPA, changes in the gas market since 1978 have contributed to the increased attractiveness of cogeneration. Provisions of the 1978 Fuel Use Act, since modified, prohibited utilities from building new gas-fired base load generators and required utilities to be off natural gas completely by 1990. In response to the Fuel Use Act, Louisiana utilities, which had relied almost exclusively on natural gas prior to 1978, began constructing coal and nuclear generating facilities.

A Pricing Problem

The combination of utility rate increases to pay for constructing these new facilities and the decline in the price of natural gas due to decreased demand increased the relative benefits to the industrial user of cogeneration vis-a-vis the purchase of electricity from a utility.

Although cogeneration is desirable in the long run, in the short run it is clearly not efficient for industry to increase electrical generating capacity when the state already has significant excess capacity.

The industrial user, however, makes his decision based on the economics that he faces. Excess capacity is irrelevant to his decision; the relevant factor is the price he must pay for electricity. Thus, we have a pricing problem.

Creative Solutions

One approach utilities have taken to address the problem, with regulatory approval, is to forestall additional cogeneration capacity by entering into individually tailored contracts with potential cogenerators.

For example, to meet a serious threat of self-generation by a customer who could procure a relatively cheap supply of gas, one Louisiana utility agreed to use the customer's gas supply to generate electricity in its generators for that customer.

In a somewhat different situation, another utility kept a cogeneration venture from increasing the state's generating capacity by becoming a participant in the venture and contributing an already existing generator, thus swapping capacity from the utility to the cogenerator.

More often, tariffs applying to whole groups of customers are used by utilities to address the problem of potential loss of load to cogeneration. One utility offers a discount to customers in exchange for the right to interrupt service.

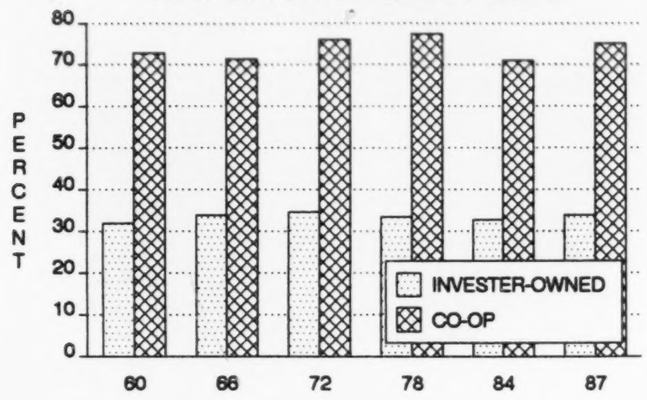
Another utility has introduced the steam user's tariff, under which the applicable rate depends on the characteristics of the customer's use of process steam.

Cogeneration continued on back

Historical Presentation—Electricity

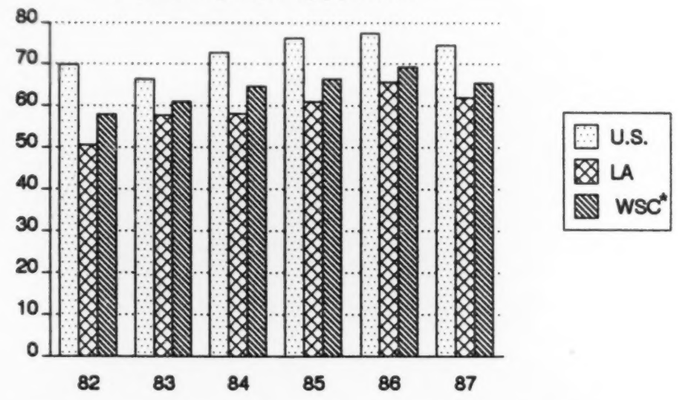
RESIDENTIAL ELECTRIC SALES

AS % OF TOTAL ELECTRIC SALES



AVE. RESIDENTIAL ELECTRIC BILLS

DOLLARS PER 1000 KWH

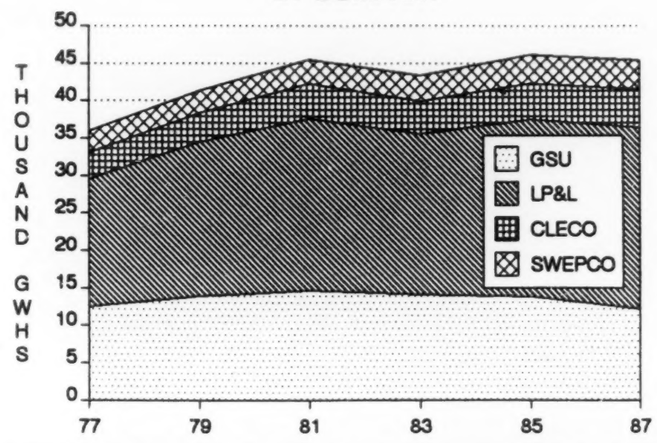


* West South Central region average

Source: DOE/EIA 0040(yr.)

TOTAL ELECTRIC SALES

BY COMPANY



Figures represent TOTAL except when otherwise noted

Totals may not add due to rounding

Indicator	85.1	85.2	85.3	85.4	86.1	86.2	86.3	86.4	87.1	87.2	87.3	87.4
RESIDENTIAL ELECTRICITY PRICES (Avg. $ at 1000kwh)												
Investor Owned												
CLECO	73	74	74	70	65	65	63	70	67	71	68	66
GSU	71	81	77	73	68	71	66	63	56	72	69	73
LP&L	57	58	58	63	67	68	69	65	69	70	72	70
NOPSI	58	58	58	61	62	64	61	63	60	62	65	63
SWEPCO	55	70	71	69	64	70	69	66	63	67	67	66
Co-operatives												
Beauregard	91	98	95	99	100	102	99	97	98	97	91	87
Bossier	103	108	101	106	104	107	103	102	103	102	96	97
Concordia	104	106	102	105	106	110	103	110	103	105	95	98
Dixie	96	105	99	103	101	103	99	98	99	100	94	93
Pointe Coupee	102	100	98	98	100	102	99	102	101	102	93	96
Valley	74	84	89	108	104	109	102	106	104	104	98	98
Washington	87	89	88	91	93	95	93	90	91	88	82	79

Indicator	85.1	85.2	85.3	85.4	86.1	86.2	86.3	86.4	87.1	87.2	87.3	87.4
RESIDENTIAL SALES AS % OF TOTAL SALES												
Investor Owned												
CLECO	60.4	65.0	79.0	58.8	55.3	59.1	74.0	57.8	57.0	57.9	73.1	55.6
GSU	45.6	46.9	60.6	48.2	51.9	50.9	66.9	54.3	52.2	53.1	66.9	46.8
LP&L	6.1	6.8	10.3	7.2	6.1	7.0	10.9	7.5	6.2	7.1	10.1	6.3
NOPSI	29.4	26.9	35.6	24.9	27.8	26.9	33.4	26.6	28.2	29.6	34.4	25.6
SWEPCO	23.8	24.7	21.4	24.9	25.3	26.4	23.6	24.9	25.5	26.1	23.2	24.9
Co-operatives												
Beauregard	79.3	81.8	83.7	77.8	78.7	79.5	84.3	80.2	81.7	79.9	83.7	51.3
Bossier	60.9	61.1	70.6	63.7	66.8	73.4	80.4	77.0	76.2	74.7	83.7	48.6
Concordia	55.3	55.6	68.4	60.3	64.9	65.2	74.1	64.0	68.9	56.1	89.8	38.0
Dixie	83.0	80.6	84.6	80.5	81.3	80.5	84.8	81.3	82.8	80.7	84.2	53.0
Pointe Coupee	56.2	54.3	63.2	55.3	55.8	57.3	66.0	60.3	60.0	59.7	68.7	51.0
Valley	74.4	73.6	78.5	76.4	76.6	76.2	83.1	76.7	80.9	79.7	85.0	57.2
Washington	82.7	80.6	81.0	79.6	81.2	78.7	78.9	79.9	81.9	80.2	80.9	39.1

Cogeneration continued from front

The rates are intended to make purchases of electricity economically attractive relative to the customer's cogeneration potential.

These approaches address the short-run problems associated with cogeneration that utilities face during the current period of excess capacity. As this excess capacity disappears, however, different approaches will be needed as utilities work with industry to provide an efficient use of energy resources through cogeneration.

One Georgia utility is already taking steps to address both the short-run and long-run issues of cogeneration by offering reduced rates for potential cogenerators now in return for a commitment by these industrial customers to build cogeneration capacity at an agreed-upon future date.

This kind of creative strategy will be needed if we want to harness the efficiencies of cogeneration while discouraging additional capacity during a period when it is not needed.

Rochford is now Rates and Regulatory Affairs Manager for Cajun Electric Power Cooperative.

This issue of "Louisiana Energy Indicators" was sponsored by **Premier Bancorp,** a seven-bank holding company headquartered in Baton Rouge. The banks include First National Bank of Shreveport/Bossier, Louisiana National Bank of Baton Rouge, Ouachita National Bank of Monroe/West Monroe, Guaranty Bank of Lafayette, State National Bank of New Iberia, Premier Bank of the South in the Terrebonne/Lafourche areas and Premier Bank of Lake Charles.

SOURCES OF INDICATOR DATA

PUBLICATIONS

Consumer Price Index. U.S. Dept. of Labor. Bureau of Labor Statistics. Monthly.
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Electric Power Monthly. U.S. Dept. of Energy. Energy Information Administration.
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Wages. Number of Establishments. Employment Data

Louisiana Climatological Data. U.S. Dept. of Commerce. National Weather Service. Monthly.
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Louisiana Petroleum Activity Report. Monthly.
Drilling. Rig Activity. Oil and Gas Production. Refinery Runs and Stocks Data

Monthly Energy Review. U.S. Dept. of Energy. Energy Information Administration. Monthly.
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Wellhead Price of Natural Gas - U.S.
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Survey of Current Business. U.S. Dept. of Commerce. Bureau of Economic Analysis. Monthly.
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World Oil. Gulf Publishing Company. Houston, Texas.
Wells Drilled; Wells Completed

OTHER SOURCES

Hughes Tool Company
Rig Activity

Louisiana Department of Natural Resources. Office of Conservation.

Louisiana Department of Revenue and Taxation. Statement of Net Collections and Distributions. (Mimeograph)
Taxes and Revenues

Louisiana Public Service Commission. (Mimeograph)
Electricity Data
Intrastate Natural Gas Prices

Petroleum Information Corporation (Unpublished data.)
Wells Completed
Wells Abandoned

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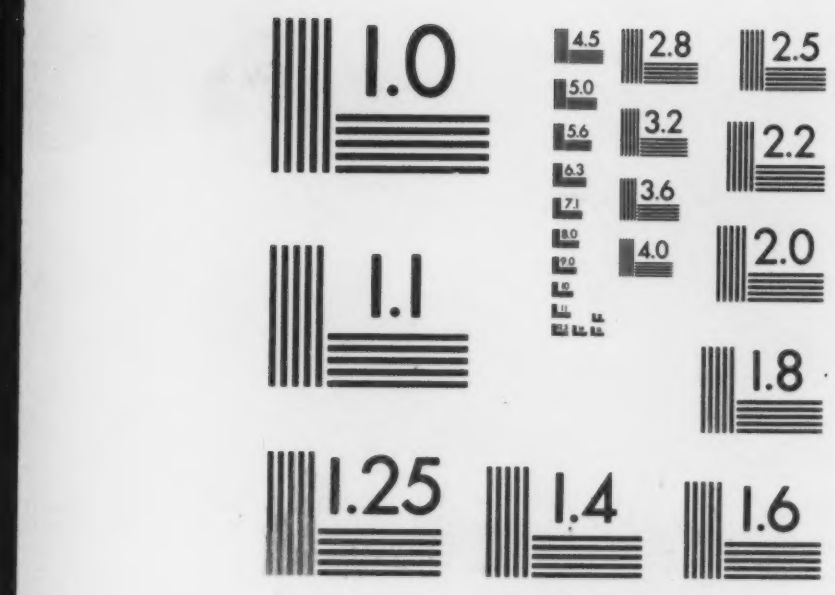

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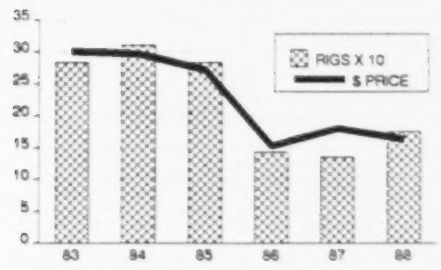
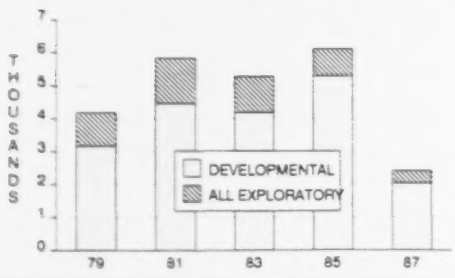
Drilling

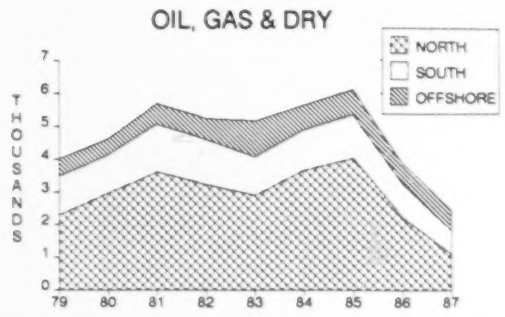
RUNNING RIGS VS WELLHEAD PRICE OF LA OIL



WELLS DRILLED OIL,GAS & DRY



WELLS COMPLETED - TOTAL OIL, GAS & DRY



Figures represent TOTAL except when otherwise noted

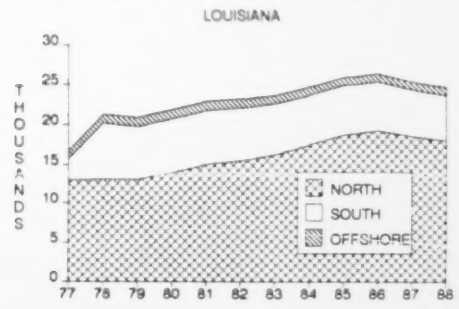
Totals may not add due to rounding

Indicator	1983	1984	1985	1986	1987	87.3	87.4	88.1	Apr	May	Jun	Year to Date Through Last Month Reported June 1987	Year to Date Through Last Month Reported June 1988	% Change
DRILLING PERMITS ISSUED														
Exploratory	645	702	599	298	284	81	93	56	16	22	27	110	121	10.0%
Developmental	4849	6929	4811	1983	2148	638	584	388	145	160	206	926	899	-2.9%
Total	5494	7631	5410	2281	2432	719	677	444	161	182	233	1036	1020	-1.5%
RUNNING RIGS (Avg. Hughes Tool)														
North	29	30	25	12	12	14	13	11	12	13	13	10	12	20.0%
South	128	147	129	63	59	63	73	74	69	66	61	50	73	46.0%
Offshore (Includes Fed. OCS)	125	132	129	69	65	74	83	90	89	88	92	51	90	76.5%
EXPLORATORY WELLS - LA.*														
Oil	66	59	62	34	20	2	4	4	2	1	1	14	8	-42.9%
Gas	97	82	100	63	56	17	12	15	2	2	2	27	21	-22.2%
Dry	821	704	665	423	350	79	97	105	26	20	37	174	188	8.0%
DEVELOPMENTAL WELLS - LA.* (As reported)	4180	4806	5290	3372	2029	562	571	528	205	118	241	896	1092	21.9%
WELL COMPLETIONS - LA.* (As reported)														
North	2878	3667	4038	2209	1106	312	344	228	73	58	123	450	482	7.1%
South	1193	1248	1325	1036	740	195	175	222	73	41	51	370	387	4.6%
Offshore (Incl. fed. water)	1094	736	754	628	598	153	165	202	89	42	108	280	441	57.5%

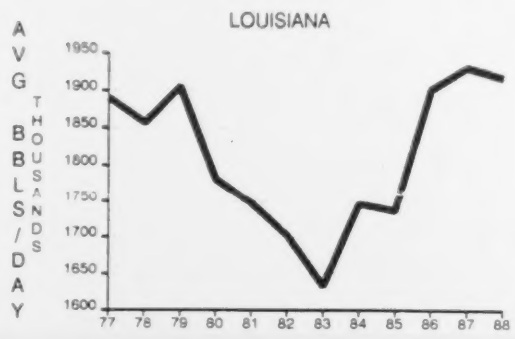
*Source: Petroleum Information Corporation. CES maintains additional data in the Indicators Database.

Production

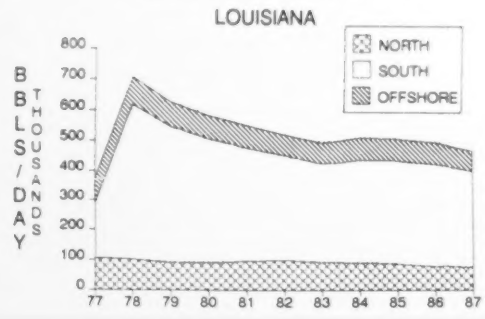
CRUDE OIL PRODUCING WELLS



REFINERY RUNS



CRUDE OIL PRODUCTION



Figures represent TOTAL except when otherwise noted

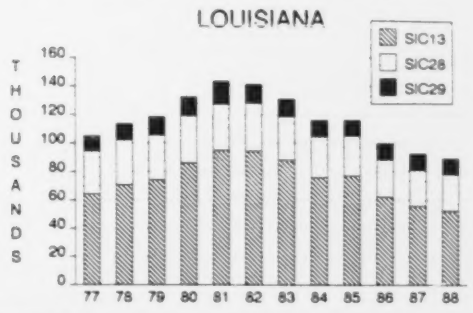
Totals may not add due to rounding

Indicator	1983	1984	1985	1986	1987	87.3	87.4	88.1	Apr	May	Jun	Year to Date Through Last Month Reported June 1987	Year to Date Through Last Month Reported June 1988	% Change
CRUDE OIL PRODUCING WELLS														
North	16299	17544	18792	19346	18630	18430	18383	18106	18243	17989	17926	18853	18079	-4.1%
South	6374	6241	6278	6117	5897	5874	5861	5815	5735	5773	5626	5927	5763	-2.8%
Offshore	1037	1030	996	1000	963	965	975	1003	987	988	953	956	989	3.5%
Total	23710	24815	26066	26463	25490	25269	25219	24923	24965	24750	24505	25736	24832	-3.5%
NATURAL GAS PRODUCING WELLS														
North	10502	10812	11026	11049	10726	10668	10771	10775	10673	10833	10896	10733	10788	0.5%
South	3065	2955	2976	2698	2670	2636	2618	2557	2558	2585	2599	2712	2569	-5.3%
Offshore	549	532	511	438	413	405	426	432	435	455	455	411	440	7.1%
Total	14116	14299	14513	14185	13809	13708	13815	13764	13666	13873	13950	13856	13797	-0.4%
CRUDE OIL PRODUCTION - Lease Condensate Included (Avg. MBBLS/day)														
North	93.8	90.7	87.6	80.5	76.7	73.8	79.5	75.8	74.3	73.5	73.0	76.8	74.7	-2.7%
South	332.9	348.0	350.2	345.9	328.0	318.1	316.4	320.4	318.9	315.8	305.0	338.8	316.8	-6.5%
Offshore	67.7	74.2	70.0	71.4	66.6	66.6	60.9	70.6	69.4	72.9	68.1	69.4	70.3	1.3%
Total	494.3	512.9	507.8	497.8	471.3	458.5	456.8	466.8	462.6	462.2	446.1	485.0	461.9	-4.8%
NATURAL GAS PRODUCTION - Casinghead Included (Avg. MMCF/day)														
North	1.00	1.05	0.96	0.99	0.98	0.92	1.00	1.04	1.01	0.98	0.99	1.00	1.01	1.0%
South	3.64	3.76	3.48	3.30	3.20	3.07	3.16	3.23	3.22	3.13	3.13	3.28	3.19	-2.7%
Offshore	0.87	0.83	0.70	0.68	0.62	0.59	0.66	0.66	0.61	0.62	0.62	0.62	0.64	3.2%
Total	5.49	5.64	5.13	4.97	4.80	4.57	4.82	4.92	4.84	4.73	4.74	4.90	4.85	-1.0%
COAL-LIGNITE PRODUCTION (Thousand Short Tons)	NC	NC	NC	2254	2774	730	668	706	253	292	263	1376	1514	10.0%
REFINERY RUNS (Avg.MMCF/day)	1633.1	1746.0	1736.5	1901.5	1931.4	1921.0	2038.3	2030.8	1891.2	1787.3	1733.5	1883.0	1917.4	1.8%
ELECTRICITY GENERATED (GWH)*														
Gas	28311	29360	27735	26035	23823	8104	5998	5110	1720	2113	2425	9721	11368	16.9%
Coal	8377	9830	13968	15587	15101	4327	4544	4565	1391	1639	1640	6230	9235	48.2%
Oil	356	140	100	419	60	8	14	149	3	3	3	38	158	315.8%
Nuclear Power	0	0	2458	10638	12324	3422	2126	3963	684	650	1257	6776	6554	-3.3%
Total	37044	39330	44261	52679	51308	15862	12682	13788	3799	4405	5325	22764	27317	20.0%

*1GWH = 1 MILLION KWH
NC = Not Collected

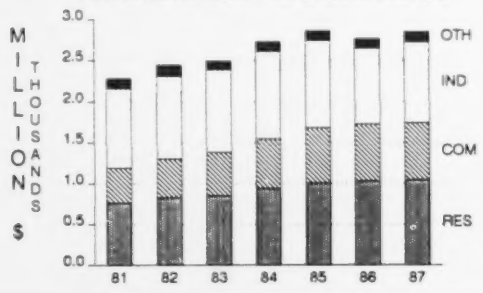
Employment, Prices & Revenues

ENERGY EMPLOYMENT LOUISIANA



ENERGY WAGES AS A % OF TOTAL LA WAGES

LA INVESTOR OWNED UTILITIES TOTAL REVENUE BY CUSTOMER CLASS



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Indicator	1983	1984	1985	1986	1987	87.3	87.4	88.1	Apr	May	Jun	Year to Date Through Last Month Reported June 1987	Year to Date Through Last Month Reported June 1988	% Change
EMPLOYMENT (Thousands) - Avg.														
Oil & Gas Extraction (SIC13)	88.0	75.6	77.1	61.9	55.8	59.7	55.9	52.1	52.0	52.0	52.3	53.8	52.1	-3.2%
Chemicals & Allied Products (SIC28)	30.9	28.9	28.0	26.1	25.2	25.3	25.3	25.4	25.6	25.7	25.7	25.2	25.5	1.2%
Petroleum Refining (SIC29)	12.4	11.6	11.1	11.5	11.6	11.8	11.7	11.4	11.4	11.4	11.4	11.4	11.4	0.0%
Total La. Employment	1657.0	1751.9	1744.2	1727.3	1728.7	1765.9	1765.4	1673.3	1686.7	1705.3	1723.1	1691.8	1689.2	-0.2%
OIL PRICES ($/BBL) - Avg.														
Wellhead														
LA	30.02	29.67	27.22	15.32	17.98	19.10	17.97	16.05	16.63	16.86	16.16	17.42	16.30	-6.4%
US	26.19	25.88	24.09	12.51	15.42	16.73	15.23	13.34	13.92	14.11	13.52	14.85	13.59	-8.5%
SPOT (Avg. End of Week)														
W. Texas Int. - Cushing	NC	NC	NC	14.47**	18.80	11.22	18.81	16.69	18.00	17.50	15.15	18.76	16.78	-10.6%
Louisiana - St. James	NC	NC	NC	14.56**	10.51	11.22	19.16	16.96	17.83	17.44	15.20	15.80	16.86	6.7%
GAS PRICES ($/MCF)-Avg.														
Wellhead														
LA State Lands	2.48	2.55	2.39	1.83	1.61	1.47	1.58	1.84	1.70	1.39	1.47	1.40	1.64	17.1%
US	2.59	2.66	2.51	1.94	1.71	1.67	1.72	1.80	1.68	1.66	NA	1.72	NA	NA
LA Spot Price (Avg.)	NA	NA	2.45	1.75	1.49	1.38	1.55	1.95	1.49	1.39	1.39	1.48	1.70	14.9%
COAL PRICES ($/Short Ton)														
(Avg.Elec.Util.Receipt Price)	38.83	37.40	37.06	29.21	26.81	27.39	26.67	25.07	24.30p	24.30p	24.30p	26.59	24.69p	-7.1%
PRINCIPAL ENERGY RELATED REVENUES (Millions $)														
Sev. - Oil & Condensate	664.1	653.5	598.3	390.3	345.6	92.3	89.8	103.0	28.4	16.5	23.2	163.4	171.1	4.7%
Sev. - Natural Gas	132.7	131.3	121.1	126.1	112.7	26.7	27.6	30.1	8.7	8.0	8.2	58.3	55.1	-5.5%
Bonuses	47.0	68.0	32.1	15.9	25.5	11.2	7.3	6.6	0.7	0.9	0.9	7.0	9.1	30.0%
Rentals	27.7	21.2	20.9	12.3	6.7	0.8	1.4	2.0	0.5	0.4	0.3	4.5	3.2	-28.9%
Royalties	444.9	436.1	379.1	304.5	253.8	61.5	60.0	61.7	19.9	21.0	23.3	132.3	125.9	-4.8%
Special Fuels Tax	27.1	41.1	52.3	57.6	55.2	13.9	14.3	13.4	5.7	4.5	4.7	27.0	28.2	4.4%
Gasoline Tax	161.0	227.7	286.2	289.5	311.6	81.8	73.4	75.3	25.9	27.1	27.1	156.4	155.3	-0.7%
Nat. Gas Franchise Tax	12.5	11.7	11.0	10.9	9.3	2.0	2.1	2.5	1.2	1.4	0.0	5.2	5.0	-3.8%
Total Energy Revenues	1519.5	1592.6	1502.9	1211.6	1126.4	291.1	276.9	294.6	91.3	79.9	88.1	558.4	554.8	-0.6%
TOTAL STATE REVENUES (Millions $)	3775.0	3785.2	4335.6	3913.2	3783.6	940.8	934.6	887.0	580.4	324.1	364.8	1908.2	2156.3	13.0%
ENERGY RELATED REVENUES AS % OF STATE TOTAL	40.3	42.1	34.7	31.0	29.8	30.9	29.6	33.2	15.7	24.7	24.2	29.3	25.7	-12.1%

NA = Not available from source
NC = Not collected
NR = Not reported

p = Preliminary
* 5 month average
** 7 month average

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Louisiana Energy Indicators

Summer 1988

Center for Energy Studies

Louisiana State University

Gas Balancing: The Whys and Hows

By Douglas D. Smith and Felicity Hamilton

The purpose of gas balancing agreements is to allow production of gas by a co-working interest owner when another interest owner has failed to secure or has lost part or all of its gas market. Gas balancing agreements provide a mechanism for accounting and balancing the resulting imbalance.

Historically, gas balancing occurred when two pipelines from two different purchasers hooked into the same field--a split connection. Since, invariably, the purchasers would take at different rates from the same field, agreements developed to handle the imbalances.

In the late seventies and early eighties, more and more gas properties were being explored and developed by several producers. Often these producers were financed by advance payments from gas buyers or were subsidiaries of the buyers themselves. This factor greatly added to the proliferation of split streams.

In the gas glut of the mid-eighties, another cause of balancing appeared. In an effort to reduce their gas supplies, gas companies stopped allowing operators to sell the non-operator gas under the operating agreement.

Currently, with open access through most of the larger interstate lines, we are entering a new vista of several marketers buying gas through the same lines.

Finally, due to contractual disputes and settlements between producers and purchasers, we often encounter wide variations in what one purchaser will take from the various working interest owners under the same contract in a well.. That is, a pipeline may take 70 percent of one working-interest-owner's percentage of the gas in a well and only five percent of another working-interest-owner's interest due to separate settlements negotiated under the same contract.

So whether it is a split connection, non-signatory working interest owners, several purchasers under the same connection, different percentage takes from the same purchaser or combinations of these possibilities, gas balancing has become increasingly important.

The Balancing Agreement

A good balancing agreement accounts for imbalances and provides for balancing these imbalances.

The agreement may include a provision for storage by one or more parties when said parties are neither marketing nor delivering their share of the production and the remaining parties are marketing the full stream. An underproduced party, after notice to the operator, may begin taking its current full share plus a percentage of the interest of the overproduced parties until it has received its gas in storage and balanced the gas account as to its interest.

The gas storage and balancing agreement should specifically provide that each party will make settlement with its royalty owners, whether or not it is taking or delivering its share of the gas.

The advantage of this arrangement is that all of the numerous and complex obligations of the working interest owners to royalty owners, holders of production payments and other owners of interests in the various tracts do not become the obligation of all the participants in the unit.

These outside obligations, based on pre-existing contracts, are the concern of the parties to the contracts only. If there has been a price increase at the time an underproduced party begins to make up its underproduction, it will be necessary for the underproduced party account to its royalty owners for the difference in the price actually received and the price upon which they were previously paid while such party's gas was going into storage.

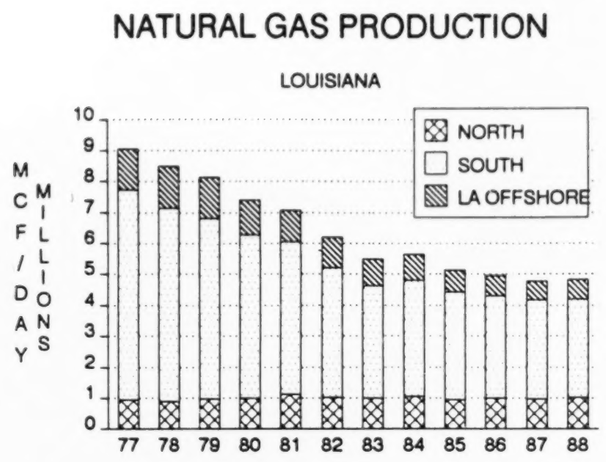
The balancing agreement should include a provision in case the reservoir is depleted while the gas accounts are unbalanced. In this case, cash balancing is the method used to compensate the underproduced parties. Said cash settlements may be based on last price received, average pricing or actual pricing.

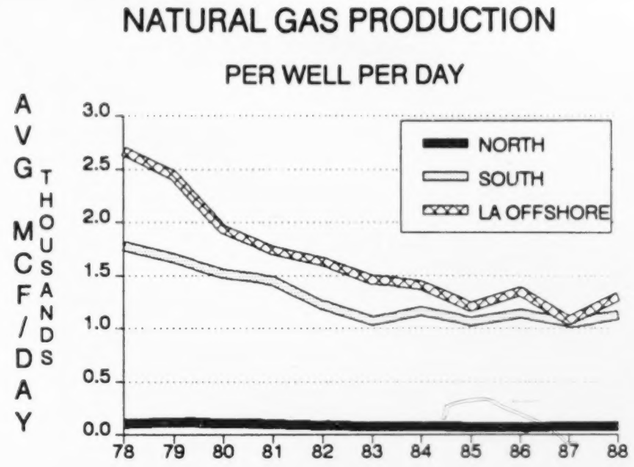
Other provisions which a gas balancing agreement should contain include the following:

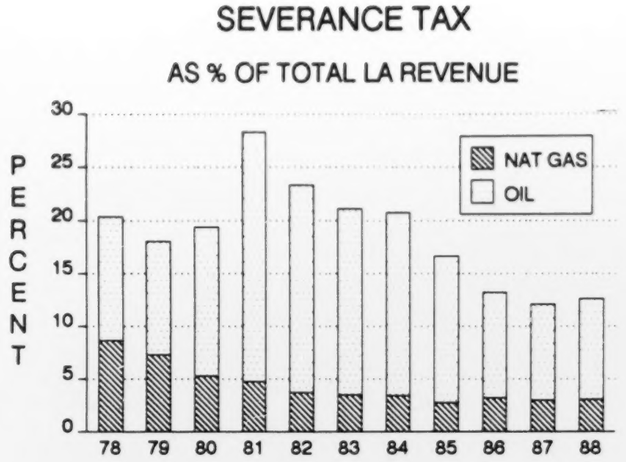
1. All liquid hydrocarbons recovered to be owned in proportion to ownership;
2. Production and severance taxes to be paid by the party delivering gas;
3. Any party has the right to take its full share at any time to meet deliverability tests required by its purchaser;
4. The agreement has no effect on the

Continued on back page

Historical Presentation - Natural Gas




NATURAL GAS PRODUCTION
PER WELL PER DAY
AVG MCF/DAY THOUSANDS
NORTH
SOUTH
LA OFFSHORE
0.0 0.5 1.0 1.5 2.0 2.5 3.0
78 79 80 81 82 83 84 85 86 87 88



Figures represent TOTAL
except when otherwise noted

Totals may not add due to rounding

Indicator	82.3	82.4	83.1	83.2	83.3	83.4	84.1	84.2	84.3	84.4	85.1	85.2
WELLS DRILLED - LA (Includes Fed. Offshore)												
New Field Wildcats	9	13	3	13	10	7	4	12	7	6	4	8
Other Exploratory	19	25	15	23	13	13	11	16	20	6	10	30
Developmental	258	339	264	272	209	266	268	245	223	256	278	231
All	1114	1336	1198	1445	1194	1426	1238	1522	1547	1424	1425	1632
WELLS COMPLETED												
North	180	272	143	146	117	182	223	145	116	196	174	109
South	73	79	71	72	53	38	40	63	53	34	67	89
Offshore (Includes Fed. Offshore)	33	26	68	90	62	66	20	65	81	38	51	71
PRODUCTION PER WELL (Avg. MCF/Day)												
North	82	78	76	79	82	86	87	85	84	76	76	68
South	1153	1163	1106	1035	1038	1097	1193	1185	1142	1142	1057	1103
Offshore (LA only)	1495	1706	1459	1406	1471	1490	1399	1490	1382	1345	1281	1129
Total	380	386	359	341	340	355	365	367	350	342	337	314

Indicator	85.3	85.4	86.1	86.2	86.3	86.4	87.1	87.2	87.3	87.4	88.1	88.2
WELLS DRILLED - LA (Includes Fed. Offshore)												
New Field Wildcats	14	6	8	7	6	4	7	2	12	8	6	4
Other Exploratory	13	15	15	13	4	6	6	11	5	4	9	2
Developmental	364	272	259	294	82	133	101	94	104	163	139	143
All	1612	1438	1491	1316	600	531	567	545	640	664	652	657
WELLS COMPLETED												
North	241	197	124	176	53	73	53	54	56	119	55	70
South	70	55	105	63	21	25	25	25	26	31	40	26
Offshore (Includes Fed. Offshore)	80	41	53	75	18	26	26	28	39	25	59	54
PRODUCTION PER WELL (Avg. MCF/Day)												
North	73	76	81	73	72	82	80	78	72	79	82	79
South	1020	1091	1255	1102	1130	1083	1080	1036	1078	1087	1139	1104
Offshore (LA only)	1053	1354	1340	1347	1353	1357	1198	1018	1321	1411	1372	1221
Total	297	318	351	311	310	306	323	308	297	311	319	307

Gas Balancing continued from front

obligation of each party to pay its share of operating costs as set forth in the operating agreement covering the properties;

The courts have construed balancing agreements very strictly. For example, in the Chevron U.S.A., Inc. v. Belco, 755 F. 2d 1151 (1985) case, Chevron had written a balancing agreement which provided only for balancing-in-kind and made no provision for cash balancing. Unfortunately, the well depleted before Chevron hooked up. The courts ruled that if Chevron wanted cash balancing, the company should have provided for it in the balancing agreement.

Existing Jurisprudence In the Absence of a Balancing Agreement

Jurisprudence generally provides that in the absence of a gas balancing agreement, the accepted industry practice is to require that imbalances in gas-takes be remedied by balancing in-kind until gas production ceases.[1]

However, while courts use this as a general rule they also take into account such factors as (a) the existence of a fixed and certain amount of imbalance or underproduction; (b) the elimination of the cause of the imbalance; (c) the action or inaction of the underproduced party during the period of imbalance; (d) the decline in production from the reservoir; and (e) the rights and obligations of the parties under existing agreements and applicable law.

1 Beren v. Harper Oil Company, 546 P. 2d 1356 (Okla. App. Dov. 1, 1975) United Petroleum Exploration V. Premier Resources, 511 F. Supp. 127 (W.D. Okla. 1980).
No Louisiana court decisions were found discussing the industry practice regarding balancing takes of gas from a source of supply owned in common. Oklahoma does, however, follow the same theory of non-ownership of fugacious minerals in place as does Louisiana and has a similar statutory scheme regarding conservation of mineral resources.

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Electricity Data
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Wells Completed
Wells Abandoned

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